DOCUMENT RESUME

ED 083 400 CE 000 390

TITLE Business Mathematics Syllabus.
INSTITUTION New York State Education Dept., Albany. Bureau of Secondary Curriculum Development.
PUB DATE 73
NOTE 181p.; 1973 Revision

EDRS PRICE MF-$0.65 HC-$6.58
DESCRIPTORS Arithmetic; Business Skills; *Business Subjects; *Courses; Curriculum Guides; *Grade 10; *Grade 11; Instructional Materials; *Mathematics; Units of Study (Subject Fields)
IDENTIFIERS *Business Mathematics

ABSTRACT

The course is designed to build the knowledge and skills necessary to solve a variety of arithmetic problems that are commonly found in business situations, specifically for occupationally oriented students who have the ultimate objective of gainful employment in offices or stores, or who are preparing for careers in fields such as agriculture, beauty culture, home economics, or food services. It is an advanced course for high school tenth or eleventh graders who have a reasonable mastery of fundamental arithmetic and contains curriculum concepts and general teaching suggestions, overview of content, administrative considerations, fundamentals, refresher, business cycle, banking and finance, office mathematics and personal money management. The appendixes cover: aliquot parts; measurement; 60-day, 6% method applications; metric conversion table; and ability forms for appraising basic arithmetic ability. (AG)

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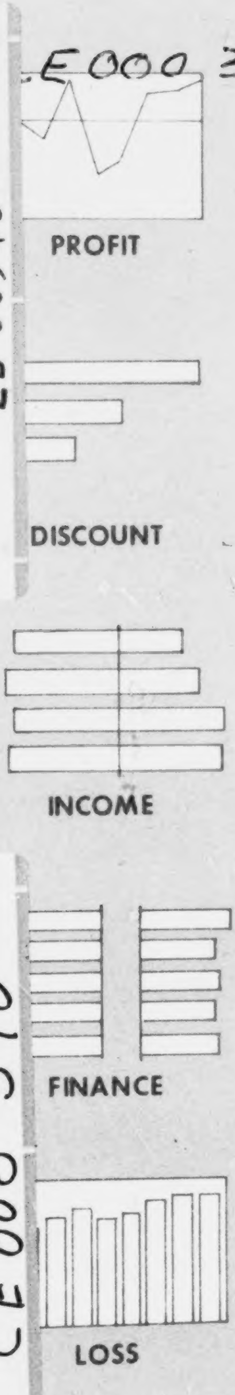

BUSINESS MATHEMATICS

SYLLABUS

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The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Secondary Curriculum Development
Albany, New York 12224
1973

ED 083400

BUSINESS MATHEMATICS SYLLABUS

1973 Revision

THE UNIVERSITY OF THE STATE OF NEW YORK/THE STATE EDUCATION DEPARTMENT
BUREAU OF SECONDARY CURRICULUM DEVELOPMENT/ALBANY, NEW YORK 12224/1973

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FOREWORD

The State Education Department is grateful to the following members of the committee which met
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  Curriculum Development

This syllabus revision has incorporated the following philosophic recommendations of the commi

- The entering student should have basic arithmetic competencies.
- Consumer education should be a part of the Business Mathematics course.
- The content of this course should be oriented toward occupational education goals, such as o store clusters.
- The syllabus should accommodate both Regents preparatory and non-Regents students.
- Goals for occupational clusters shall be stated in measurable performance objectives for stu

The Bureau of Testing and Advisory Services developed the *Minimum Competency Test in Arithmeti* recommended in this syllabus.

William C. Bahn, Jr., Roswell E. Fairbank, George R. Gibbs, Jr., Wallace W. Kravitz, and Louise wrote the various sections of the manuscript.

Robert G. Fleig of the Bureau of Business Education and Alvin E. Rubin of the Bureau of Second Development supervised this project and prepared the manuscript for publication.

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INTRODUCTION

Arithmetic skills are basic to most business and office employment. Business Mathematics give opportunities to apply these skills to a variety of problems typical of those encountered by a busi office employee,or consumer.

Business Mathematics is recommended as a tenth-grade subject, particularly for students who ar business education. Not all students are able to succeed in a Business Mathematics course as desig syllabus. For students who are particularly weak in arithmetic fundamentals a special course may b appropriate. It is important that teachers and guidance personnel have some knowledge of the arith petencies of students before they are enrolled in a Business Mathematics course.

This new syllabus provides a variety of suggestions for classroom organization and topic prese Each topic is organized with a core of applications that all students in the class should be able t extension of this core is required for those students who are Regents candidates.

The State examination in Business Mathematics will be based upon both Levels I and II of this larger schools, special sections may be organized for students who are able to master only the cont

The performance objectives, illustrative problems, and suggested time allotments provided for aids to teachers in helping them to organize their classes so that within a single classroom two le tion can be provided. Teachers may find it desirable to reproduce the performance objectives for s various topics are presented. The performance objectives presented are not exhaustive and many tea undoubtedly want to expand the performance goals for a particular case.

In developing this syllabus revision, the committee strived to make it as functional as possib business teachers will find this new guide of considerable benefit in helping their students achiev competency in Business Mathematics.

Hobart H. Conover, *Chief*
Bureau of Business Education

Robert H. Bielefeld, *Director*
Division of Occupational
Education Instruction

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CURRICULUM CONCEPTS AND GENERAL TEACHING SUGGESTIONS

The Objectives of Business Mathematics

Business Mathematics is designed to build the knowledge and skills necessary to solve a variety of arithmetic problems that are commonly found in business situations. The course is specifically and primarily designed to serve the needs of occupationally oriented students who have the ultimate objective of gainful employment in offices or stores, or who are preparing for careers in fields such as agriculture, beauty culture, home economics, or food service. For these students, the skills and concepts learned in business mathematics are useful on the eventual job or as preparation for subsequent, more technical courses.

Despite the occupational objective, however, business mathematics should be useful and appropriate for any high school youth who has the ability and the background to do the work. The knowledge of business operations and the problem-solving skills gained from business mathematics are of great value to any consumer in his daily business affairs, particularly if the course has been taught with emphasis on personal-use values.

Business Mathematics an Advanced Course

Business mathematics is an advanced course designed for high school tenth or eleventh graders who have a reasonable mastery of fundamental arithmetic. The focus of business mathematics is on solving a variety of quantitative business problems through the use of the fundamental processes of addition, subtraction, multiplication, and division, using whole numbers, decimals, and common fractions. Although considerable emphasis in the course is given to strengthening the student's command of fundamental processes, business mathematics is not the place for a student to first learn or to substantially relearn fundamental arithmetic. The amount of subject matter to be covered and the amount of time generally available for the course do not permit a full reteaching of the fundamental arithmetic processes which presumably should have been mastered at the elementary, junior high, or middle school level.

For those reasons, only those students who have demonstrated prior satisfactory mastery of arithmetic should be admitted to the business mathematics course. No precise mastery of arithmetic fundamentals can be prescribed as appropriate for all situations, but the following general guidelines are suggested for screening applicants.

Before admission to a business mathematics course, the student should have fulfilled one of the following criteria:

a) He should have successfully completed a ninth grade mathematics course,

or

b) He should have scored at least 20 of 25 points on the Minimum Competence Test in Arithmetic Fundamentals. Copies may be obtained from the Bureau of Pupil Testing and Advisory Services, State Education Department, Albany, N. Y. 12224.

Students who cannot meet the minimum proficiency requirements for admission to business mathematics should be given a choice of appropriate alternatives such as a course in general mathematics, tutorial assistance to ready themselves for business mathematics, or a special course designed for their needs.

Regents and Non-Regents Business Mathematics

Within a given school, even the kind of screening that is recommended above may result in groups of business mathematics students who are highly divergent in interests, abilities, and learning rates. Where such is the case and where the situation permits, at least two different types of business mathematics courses should be provided: Regents and non-Regents.

In general, students in the Regents course would be those with greater academic aptitude, a record of satisfactory academic achievement in arithmetic and mathematics, and a strong interest in and need for occupational education. Regents students, also, should include the faster learners, the better readers, those with the ability to deal with abstractions, and those working for a State diploma.

The feasibility of offering two or more differentiated courses in business mathematics is dependent on factors such as size of school and number of students, teacher availability, effectiveness of admissions screening, and alternatives in the total school program. In difficult situations where differentiated courses are not feasible, differentiated instruction should be provided within the existing section or sections of the business mathematics course.

Whatever the formal administrative structure of the course, the different learning and working speeds of students should be recognized. In a Regents course, for example, some students may be ready for the Regents examination at the mid-year point, and should be permitted to take the examination then. Other students will strain to meet the requirements within the full year. Analogous differences in learning rates must be expected and planned for in a non-Regents course.

In this syllabus, non-Regents level content has been designated as Level I, and Regents content has been designated as Level II.

Interrelationships of Topics

The several different units or topics that comprise the subject matter body of business mathematics are essentially discrete topics, independent of each other. However, a common feature among the topics is that they are all concerned with business problems that can be solved quantitatively. Because of this lack of significant interrelationship or hierarchy, topics need not be sequenced in any particular order.

For example, some teachers may prefer to treat the several aspects of a topic as parts of a unified whole, probably moving from the simplest to the most complex. Other teachers, however, may wish to break topics into their component skills and knowledges and sequence those basic skills and knowledges throughout the course, again building from the simple to the complex or from the most basic to the least basic. Still other teachers, however, may wish to sequence topics consistent with some logical flow of business activities.

Whatever the rationale used, the sequence should be made clear to the learner so that he is not confused by the order being used. Furthermore the teacher--and particularly new teachers--are generally well advised to follow the sequence of their textbook at least until they are sure that some change in sequencing would be definitely better.

Problem Solving in Business Mathematics

The focus of business mathematics is on solving realistic, quantitative problems which are stated in words. In the typical problem, a question is clearly asked and adequate facts are given to enable the studen to calculate the answer. The student is seldom given irrelevant information.

The major task for the student is to understand the problem and to think and calculate his way to a solution. This requires reasonably well developed skill in reading; orderly procedures of problem solving; clear understanding of the words and terms involved in the problem, including their interrelationships; concentration; persistence; and skill in quantification.

Students need extensive instruction in reading problems to determine what is asked, what information is given, and what must be determined. They need to be taught orderly procedures of thinking and problem solving in arithmetic and should be given extensive experience in planning solutions of problems with and without quantities or values. They must be provided with extensive information about the field of business problems, background information, the meaning and interrelationships of things represented by the words and terms. Rote memorization of methods of solving certain types of problems generally should be avoided; rather, students should build their capacities to reason their way through planned problem solutions. Students should learn to solve business problems accurately and quickly using the tools, the materials, the devices, and the methods used by business.

The teacher of business mathematics must be thoroughly familiar with business terminology and business situations if he is to successfully teach his students. In providing the broad and extensive background information designed to lead to thorough understanding of the business situation, the teacher should introduce and emphasize all possible and relevant business forms, documents, terminology, tables, and machinery.

Fundamentals Refresher

Despite the careful screening of students who enter business mathematics, many or perhaps most of them will need some refresher instruction in arithmetic fundamentals. The better students, of course, will need little or no review of fundamentals since they are already capable of performing operations at a fairly high rate of speed and accuracy. Most students, however, will need substantial amounts of review and some reteaching of the fundamental processes, including reteaching of the nature of the process and how it is performed; the "facts" of the process, including memorization of basic combinations; the basic methods of calculation, and desirable alternatives; and drills for speed and accuracy.

The Appraisal of Basic Arithmetic Ability in Business Arithmetic, Forms A and B, may be used to find the individual or group strengths and deficiencies. Copies of that test are presented in the appendix. Two forms of the test are provided so that the teacher may evaluate student progress by administering the alternate forms at the beginning and at approximately the half-way point in the course.

The skillful teacher will see to it that refresher instruction is individualized--that the student focuses on what he needs and doesn't know rather than on what he doesn't need or already knows. The teacher will probably spread out the fundamentals refresher, working on the principle of frequent small doses rather than infrequent large doses. He will see to it that work with fundamentals is interspersed with problem work, and that fundamentals which have been reviewed or retaught are immediately applied to the solution of problems. In fact, progress with problem work cannot be postponed until a fully satisfactory level of skill and accuracy with fundamentals has been achieved. Rather, work on fundamentals and on problems must proceed simultaneously through the course, although with less able students heavier emphasis must be given to fundamentals early in the course.

Work with fundamentals can be interesting if done in an atmosphere of challenge and urgency, with lots of good spirit, encouragement, and visible success. An enthusiastic, vital teacher who drills his class crisply and with dispatch can do much to gain results that are visible and satisfying to students.

The Place of Mental Arithmetic and Shortcuts

Most of us aid our mental arithmetic processes by written notations. We write down what we do as we do it, so we can keep track of what we've done, where we are, and what we have yet to do. We thus relieve our minds of clutter and the burden of short-term memory. However, many of us also persist in writing down the simplest calculations and using the longest way of calculating rather than using some simple shortucts that could be done mentally. This leads to a persistent question in business mathematics: What proficiency in mental operations should be required, or how much and what calculations must be done without supportive paper-pencil notations? Put another way the question is: What shortcut methods should be required or permitted?

The committee which has developed this syllabus believes that, in general, less emphasis should be given to mental calculations and other shortcuts than has been the long-standing tradition; and that appropriate emphasis on mental arithmetic should be determined by the individual teacher, based on the abilities of his students and on his own professional judgment. Certainly often-used operations should be done mentall without paper-pencil or machine calculations. The basic "facts" of addition, subtraction, multiplication, and division should be memorized, and relatively simple operations with those processes should be performed without resort to aids. Multiplication and division should unquestionably be used as shortcut methods of addition and subtraction, respectively.

As a specific example, the committee believes that mental or even paper-pencil solutions to infrequent and unduly complicated combinations in the bankers 60-day interest method (e.g.,$499, 7%, 29 days) should be avoided. Rather, the student should be taught to use tables and machinery to perform such calculations.

Any shortcut is useful if it can be performed consistently, accurately, and in less time or with fewer errors than the long way. In today's business world, however, business machines and tables are readily available and make the extensive use of mental arithmetic or other shortcuts less necessary.

Accuracy and Checking Important

In business situations involving arithmetic, speed may be important but accuracy is essential. Calculations must be correct because profit or loss may hang in the balance. All too often in the school situation, however, the student is motivated to get the problem done in the easiest or fastest way with little or no regard for accuracy.

The reality of the business world must be injected into the arithmetic classroom and producing and demonstrating correct results must be emphasized. All business arithmetic problems are provable by some appropriate checking method or methods. Therefore, students should be held accountable for checking their work and for producing right answers.

Students Need Encouragement

Arithmetic demands accurate and precise knowledge, extreme concentration, and accurate performance. For every chance of getting a right answer, there are many more chances of getting a wrong answer. Experience is a great teacher, and students who have experienced years of failure with arithmetic are usually convinced that they just can't do it.

For these and other reasons, business arithmetic students need to be given the best of possible teaching and the greatest possible encouragement. Their successes need to be planned and praised and their failures should be minimized.

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		Comparative Costs of Variou Plans

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e Taxes			
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Real Property	114	Renting or Owning Real Property	116
investment		Calculating Rate of Return on Investment	
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e depreciation		Calculating Tax Rate	
		Mortgage Amortization	
y - Calculating Yearly Rent		Gain or Loss on Sale of Property	
ost of Renting vs, Owning			
ontributions	122	Social Security Contributions	126
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of Contribution			
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Reading Market Quotations Cost of Purchasing Stocks, Bonds, and Shares in Mutual Funds, Given Commission Calculate Dividends Per Share Company Will Pay Calculate Dividends or Interest Earned by Investor		Sale of Stock . Calculating commissions, . Capital gain (loss) . Calculating total gain . Rate of return Purchase of Stock - Calcula Surcharge, and Total Cost
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OVERVIEW OF CONTENT

I	Page	Level II	Page
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osses -			
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ons		Sale of Stock	
cks, Bonds, and , Given Commission		. Calculating commissions, taxes, proceeds . Capital gain (loss) . Calculating total gain (loss)	
r Share Company		. Rate of return	
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		Income . Interest . Bonus . Dividends . Commission	
		Itemized Deductions . Medical expenses . Taxes . Contributions . Miscellaneous . Interest	
	158		

ADMINISTRATIVE CONSIDERATIONS

Content

The ability to assemble, manipulate, and interpret all kinds of numerical data is demanded of today's business employees. The topical outline of this syllabus reflects the importance of business mathematics to the business world, both in long-range planning and in daily operations.

The sequence of topics is suggestive, not mandatory. While there is definite advantage to presenting mathematical computations and problem solving abilities in a logical frame of reference (leading from the simple to the complex), the final decision as to the order of presentation will vary from teacher to teacher

The minimum amount of material to be covered on each level is prescribed. Level I is suggested as the content for courses in business mathematics that will have a teacher-made final examination and will be given for local school credit. All students should cover the Level I content. However, in courses where the terminal objective is the passing of the State Regents examination in Business Mathematics, the more complex problems in Level II should also be presented.

Rationale

Since a considerable amount of time will be given to problem definition and analysis as well as to specific techniques for problem solving, the material is introduced within a frame of relevance to the student. The student should be told not only what is to be learned but why it is meaningful. This dual emphasis will enable students to cope with the variety of on-the-job mathematical applications.

Performance Objectives

In developing sound objectives, the emphasis is placed upon the actual performance by the student. What he should be "doing" when he is mastering the objectives is stated. In order to insure clarity, precise language is used so that every student receives the same meaning and will gain the same conception of what is to be done in order to master the objective.

For example, you will notice the absence of words such as "know" and "understand" which are vague. Instead the student is asked to calculate, compute, find the amount, etc. It is important that the teacher does not assume students automatically understand verbal and written directions. Inform the students of the performance objectives and allow them to know exactly what is expected of them in order to achieve.

At the beginning of each performance objective, you will notice the "givens." These represent the conditions or guidelines within which the student is asked to perform. In this manner, the student is presented with all the necessary information to insure adequate understanding of what is expected of him in terms of desired outcomes.

The level of achievement, which is an important part of every performance objective, has been omitted. Each teacher knows his students and will engineer the strategy that will set up paths to learning. It will be the teacher's decision if he wants 80%, 90%, 100%, or less as the desired standard of achievement for each objective.

While the minimum content has been covered, the teacher is free to add or modify the objectives stated. The approach should be student-oriented. The emphasis should be switched from "what shall I teach?" to "what will the student learn?"

The possibility of a student moving from Level I to Level II should always remain open.

Students who are identified as Level I, in need of remedial work and/or incapable of performing at the level of the "average" student, should be encouraged to move into Level II as they demonstrate that they have sufficiently mastered the requisite skills.

The students pretested and identified as capable of taking the Regents examination (Level II) should be motivated and challenged to endeavor to remain on that level through the course.

The following table showing the suggested time allocation for each section will be of assistance to the teacher in planning the year's work. To afford flexibility in scheduling class time, a range of hours of instruction is given for each topic. Also, time for review and preparation for final examinations is built in for both Regents and non-Regents level classes.

The time allocation is given in hours of instruction so that teachers are able to easily convert teaching time into 45-minute, block-time, or modular schedules.

Suggested Time Allocation
(Hours of Instruction)

	Level I	Level II
Fundamentals Refresher	15	as needed
The Business Cycle	36-40	39-42
Banking and Finance	26-27	29-31
Office Mathematics	17-18	24-26
Personal Money Management	26-27	28-29
	120-127	120-128
Review	15-8	15-7
	135	135

FUNDAMENTALS REFRESHER

FUNDAMENTALS REFRESHER

Content

Whole Numbers

- Addition
  - vertical
  - horizontal
  - shortcuts
  - checking
- Subtraction
  - vertical
  - horizontal
  - shortcuts
  - checking
- Multiplication
  - vertical
  - horizontal
  - shortcuts
  - checking
- Division
  - vertical
  - horizontal
  - shortcuts
  - checking

Common Fractions

- Addition
- Subtraction
- Multiplication
- Division
- Conversion to decimal fractions

Decimal Fractions

- Finding percent of a number
- Percent one number is to another number
- Finding all of a number given a percent of that number
- Conversion of decimals to common fractions

Aliquot Parts (refer to appendix)

Measurement and Numeric Systems (refer to appendix)

Rationale

Students cannot solve the practical mathemati
cations used in everyday business situations
have a mastery of the fundamental processes i

A continued refresher of arithmetic fundamen
strengthen any weaknesses the student may hav
the beginning of the course.

FUNDAMENTALS REFRESHER

Content

. shortcuts
. checking

. shortcuts
. checking

. shortcuts
. checking

. shortcuts
. checking

- Division
- Conversion to decimal fractions

number

s to another number

ber given a percent of that

ls to common fractions

appendix)

Systems (refer to appendix)

Rationale

Students cannot solve the practical mathematical applications used in everyday business situations until they have a mastery of the fundamental processes involved.

A continued refresher of arithmetic fundamentals will strengthen any weaknesses the student may have had at the beginning of the course.

Performance Objectives

Given:

- A variety of problems in either vertical or horizontal order,

the pupil should be able to:

- add, subtract, multiply, and divide integers, fractions, and decimals with a high degree of accuracy,
- use an appropriate method to check answers,
- convert percents to fractions
- write percents as decimals
- write decimals as percents
- represent fractions as percents

Illustrative Problems

No attempt has been made to illustrate problems
volving the four fundamental processes. Problem
this type are usually interspersed throughout th
leading business arithmetic textbooks. Teachers
make every effort to individualize the review of
mentals by assigning refresher problems based up
particular needs of the individual student.

The fundamentals, which all students should mast
are listed in the appendices at the back of this
syllabus.

ormance Objectives

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percents

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Illustrative Problems

No attempt has been made to illustrate problems involving the four fundamental processes. Problems of this type are usually interspersed throughout the leading business arithmetic textbooks. Teachers should make every effort to individualize the review of fundamentals by assigning refresher problems based upon the particular needs of the individual student.

The fundamentals, which all students should master, are listed in the appendices at the back of this syllabus.

THE BUSINESS CYCLE

FIGURING FACTORY COSTS

PRICING MANUFACTURED GOODS

WHOLESALE DISCOUNTS

PRICING GOODS

RETAIL DISCOUNTS

INSTALLMENT SELLING AND FINANCING

FIGURING FACTORY COSTS

Level I

Content	Rational
Raw Materials, Labor, Overhead	Before he can quote a price, t an accurate record of all cost duction of the item he sells. In this section, the student s with some of the manufacturer' Good cost accounting procedure of any goods to know how to ca item purchased.
Straight-line Depreciation . Determining annual depreciation . Determining book value	The manufacturer's equipment d wearing out, aging, or obsoles is called *depreciation*. Strai is obtained by dividing the lo number of years the equipment

FIGURING FACTORY COSTS

Level I

Content	Rationale
or, Overhead	Before he can quote a price, the manufacturer must keep an accurate record of all costs that go into the production of the item he sells. In this section, the student should become acquainted with some of the manufacturer's costs. Good cost accounting procedures require the producer of any goods to know how to calculate the cost of each item purchased.
eciation ual depreciation ok value	The manufacturer's equipment decreases in value due to wearing out, aging, or obsolescence. This decrease is called *depreciation*. Straight-line depreciation is obtained by dividing the loss in value by the number of years the equipment has been in use.

Performance Objectives

Given:

- Total costs for labor, materials, overhead, etc. and
- the number of items manufactured,

the student will compute the unit cost.

Given:

- The original cost of a fixed asset,
- the estimated scrap or trade-in value, and
- the expected life or estimated years of use,

the student can determine by the straight-line method:

- the annual amount of depreciation and
- the book value at any time.

Illustrative Problems

The Akron Company manufactured 50,000 i
quarter ended June 30. Costs for the q
raw materials $13,256.54, labor $13,327
depreciation $3,950.50, repairs $1,675.
$842.16, heat, light, and power $1,976.
factory supplies $4,971.38. What is th
each item:

$ 3,950.50		
1.675.53		
842.16		$13,256.54
1,976.84		13,327.05
4,971.38		13,416.41
$13,416.41	total factory overhead	$40,000.00

$40,000 ÷ 50,000 = 80¢ cost per item

An electric typewriter that cost $420 w
$105 five years later.

1. What is the average annual amount o
   on this typewriter?
2. What is the book value after 3 yea
   a. $420 - $105 = $315 depreciation
      $315 ÷ 5 = $63 annual depreciati
   b. $63 x 3 = $189 depreciation for
      $420 - $189 = $231 book value

formance Objectives

abor, materials, overhead, etc.

ems manufactured,

ompute the unit cost.

of a fixed asset,

rap or trade-in value, and

e or estimated years of use,

termine by the straight-line

t of depreciation and

t any time.

Illustrative Problems

The Akron Company manufactured 50,000 items during the quarter ended June 30. Costs for the quarter were: raw materials $13,256.54, labor $13,327.05, depreciation $3,950.50, repairs $1,675.53, insurance $842.16, heat, light, and power $1,976.84, and factory supplies $4,971.38. What is the unit cost of each item:

$ 3,950.50	
1.675.53	
842.16	
1,976.84	
4,971.38	
$13,416.41	total factory overhead

$13,256.54	raw materials
13,327.05	labor
13,416.41	overhead
$40,000.00	total cost

$40,000 ÷ 50,000 = 80¢ cost per item

An electric typewriter that cost $420 when new is worth $105 five years later.

1. What is the average annual amount of depreciation on this typewriter?
2. What is the book value after 3 years of use?
   a. $420 - $105 = $315 depreciation for 5 years
      $315 ÷ 5 = $63 annual depreciation
   b. $63 x 3 = $189 depreciation for 3 years
      $420 - $189 = $231 book value

FIGURING FACTORY COSTS

Level II

Content	Rationale
Distributing Overhead	Cost accounting procedure requires the distr of expenses so that each operation and/or de involved in the production can be apportione share of overhead. In this way it may be po ascertain costs more precisely, leading to g efficiency and profits.
Finding Rate of Depreciation	Depreciation can be a cost which is distribu the operations using the equipment. The dol amount or percentage can easily be computed.

FIGURING FACTORY COSTS

Level II

Content	Rationale
	Cost accounting procedure requires the distribution of expenses so that each operation and/or department involved in the production can be apportioned its share of overhead. In this way it may be possible to ascertain costs more precisely, leading to greater efficiency and profits.
iation	Depreciation can be a cost which is distributed to the operations using the equipment. The dollar amount or percentage can easily be computed.

Performance Objectives	Illustrative Problems
Given: . The total annual expense, . the basis for distribution of expense, and . space or time used by individual departments, the student will determine the prorata share of overhead expense to charge each department.	The Royal Manufacturing Company has a ye $18,000. Find the amount that should be to each of its 4 departments. Departmen 2,000 square feet of floor space; Depart 1,500 square feet; Department III, 4,000 and Department IV, 2,500 square feet. 2,000 + 1,500 + 4,000 + 2,500 = 10,000 s Dept. I 2/10 = 1/5 x $18,000 = $3,600 Dept. II 15/100 = 3/20 x $18,000 = $2,7 Dept. III 4/10 = 2/5 x $18,000 = $7,200 Dept. IV 25/100 = 1/4 x $18,000 = $4,50
Given: . The original cost of a fixed asset and . the expected life or estimated years of use, the student will arrive at: . the annual amount of depreciation and . the rate of depreciation.	An electric typewriter that cost $420 wh worth $105 five years later. 1. What is the average annual amount of on this typewriter? 2. What is the average annual percent o on this typewriter? a) $420 - 105 = $315 depreciation fo $315 ÷ 5 = $63 annual depreciatio b) $63 ÷ 420 = 15% annual percent of

rformance Objectives

expense,

stribution of expense, and

ed by individual departments,

etermine the prorata share of
o charge each department.

t of a fixed asset and

e or estimated years of use,

rrive at:

t of depreciation and

eciation.

Illustrative Problems

The Royal Manufacturing Company has a yearly rent of \$18,000. Find the amount that should be apportioned to each of its 4 departments. Department I occupies 2,000 square feet of floor space; Department II, 1,500 square feet; Department III, 4,000 square feet; and Department IV, 2,500 square feet.

2,000 + 1,500 + 4,000 + 2,500 = 10,000 square feet

Dept. I 2/10 = 1/5 x \$18,000 = \$3,600

Dept. II 15/100 = 3/20 x \$18,000 = \$2,700

Dept. III 4/10 = 2/5 x \$18,000 = \$7,200

Dept. IV 25/100 = 1/4 x \$18,000 = \$4,500

An electric typewriter that cost \$420 when new is worth \$105 five years later.

1. What is the average annual amount of depreciation on this typewriter?
2. What is the average annual percent of depreciation on this typewriter?
    a) \$420 - 105 = \$315 depreciation for 5 years
    \$315 ÷ 5 = \$63 annual depreciation
    b) \$63 ÷ 420 = 15% annual percent of depreciation

FIGURING FACTORY COSTS

Level II

Content	Rationale
Other Methods of Depreciation . Fixed rate . Sum of years' digits . Unit of performance	Because different kinds of assets d various ways, the businessman or ma adopt a method of calculating depre most realistic, and which is accept Revenue Service. By projecting dep the accounting procedures are simpl adjustments can be made quickly, an vening time, an asset's book value determined. Once the method of depreciation has and used, it must not be changed wi approval of the IRS. Since depreci major item of overhead, switching f another may affect the amount of ta

****

PRICING MANUFACTURED GOODS

Level I

Selling Price = Cost + Gross Profit	The manufacturer of goods must dete which he will sell his product. To have accurate records detailing the In addition, a predetermined *markup*, will be added to this cost in order *selling price* that is competitive an him enough profit to stay in busines

FIGURING FACTORY COSTS

Level II

Content	Rationale
ciation ts e	Because different kinds of assets depreciate in various ways, the businessman or manufacturer must adopt a method of calculating depreciation which is most realistic, and which is acceptable by the Internal Revenue Service. By projecting depreciation schedules, the accounting procedures are simplified--end of year adjustments can be made quickly, and at any intervening time, an asset's book value can be readily determined. Once the method of depreciation has been decided upon and used, it must not be changed without prior approval of the IRS. Since depreciation may be a major item of overhead, switching from one method to another may affect the amount of taxable income.

****

PRICING MANUFACTURED GOODS

Level I

Gross Profit	The manufacturer of goods must determine the price at which he will sell his product. To do this, he must have accurate records detailing the production costs. In addition, a predetermined *markup*, or *gross profit*, will be added to this cost in order to establish a *selling price* that is competitive and still allow him enough profit to stay in business.

Performance Objectives

Given:

- The original cost of an asset,
- the trade-in or scrap value, and
- either the fixed rate, OR the sum of the years digits, OR the unit of performance method of estimating depreciation,

the student should be able to determine:

- the annual amount of depreciation and
- the book value for any year during the life expectancy of the asset.

Illustrative Problems

A factory purchases a piece of equipm
It is estimated that the equipment ca
four years at which time it wiil hav
of $500. Determine the annual deprec
sum-of-years'-digits method.

$5,000 - 500 = $4,500 Depreciation fo

1 + 2 + 3 + 4 = 10 Sum of years' digi

Year	Remaining Life	Fraction	Total Depreciati
1	4	4/10	$4,500
2	3	3/10	4,500
3	2	2/10	4,500
4	1	1/10	4,500

****

Given:

- The production costs of manufactured goods,
- the amount of markup, and
- the number of items produced,

the student will compute:

- the selling price of such goods and
- the unit selling price.

The Perlman Widget Company manufactu
5,000 widgets for $12,000, including
In order to provide a markup of 10%,
selling price per widget?

$$\frac{\$12,000}{5,000} \times 1.10 = \$2.64 \text{ each}$$

Performance Objectives

ost of an asset,

r scrap value, and

ed rate, OR the sum of the years
unit of performance method of
reciation,

ld be able to determine:

unt of depreciation and

for any year during the life
the asset.

costs of manufactured goods,

markup, and

items produced,

compute:

rice of such goods and

ing price.

Illustrative Problems

A factory purchases a piece of equipment for $5,000. It is estimated that the equipment can be used for four years at which time it will have a trade-in value of $500. Determine the annual depreciation by the sum-of-years'-digits method.

$5,000 - 500 = $4,500 Depreciation for 4 years

1 + 2 + 3 + 4 = 10 Sum of years' digits

Year	Remaining Life	Fraction	Total Depreciation	Annual Depreciation
1	4	4/10	$4,500	$1,800
2	3	3/10	4,500	1,350
3	2	2/10	4,500	900
4	1	1/10	4,500	450
				$4,500

****

The Perlman Widget Company manufactured its first 5,000 widgets for $12,000, including labor and materials. In order to provide a markup of 10%, what should be the selling price per widget?

$$\frac{\$12{,}000}{5{,}000} \times 1.10 = \$2.64 \text{ each}$$

PRICING MANUFACTURED GOODS

Level I

Content	Rationale
Gross Profit - Operating Expenses = Net Profit	In addition to his factory costs, the man must maintain accurate records for operat such as selling and administrative expens these are deducted from the gross profit manufactured goods, the result is the *net* Since the profit motive is a dominant for lying our economy, this calculation becom important one for every business and taxp
Trade Discounts	The manufacturer must offer his goods for prices which his distributors in turn can sumers. He will usually guide his distri the trade by suggesting their retail sell This may be done by listing the manufactu catalogs subject to a *trade discount*, a d which in turn might become the amount of markup.

PRICING MANUFACTURED GOODS

Level I

Content	Rationale
erating Expenses = Net Profit	In addition to his factory costs, the manufacturer must maintain accurate records for operating expenses such as selling and administrative expenses. When these are deducted from the gross profit realized on manufactured goods, the result is the *net profit*. Since the profit motive is a dominant force underlying our economy, this calculation becomes an important one for every business and taxpayer.
	The manufacturer must offer his goods for sale at prices which his distributors in turn can sell to consumers. He will usually guide his distributors in the trade by suggesting their retail selling prices. This may be done by listing the manufactured goods in catalogs subject to a *trade discount*, a deduction which in turn might become the amount of the retailer's markup.

Performance Objectives	Illustrative Problems
Given: . The amount of gross profit on manufactured goods, . the amounts of various operating expenses, and . the number of units manufactured, the student can figure: . the net profit on these goods and . the unit net profit.	
Given: . The manufacturer's list price of certain goods and . a rate of trade discount, the student will find the invoice price of such goods.	The owner of a furniture store buys lamps at a l price of \$49.00 each, less a trade discount of 1 What is his cost for each lamp? \$49.00 x .10 = \$4.90 trade discount \$49.00 -4.90 \$44.10 cost

PRICING MANUFACTURED GOODS

Level II

Content	Rationale
Trade Discounts . Series of discounts	A manufacturer or wholesaler usually has a listing his merchandise for sale subject to discounts or a *series of trade discounts*. be published separately, and are revised wh costs change.
	Depending upon what level a buyer is in the of distribution, he may be given 2 or 3 dis Wholesalers and distributors usually are en more discounts because of dealing in larger than the retailers.
	If the manufacturer offers the trade discou 25%, 10%, and 5%, the retailer would probabl only 1 or 2 of the discounts.
. Single Discount Equivalent	Whenever trade discount series are offered, convenient to have a single discount which lent to the series. This simplifies the ca of the invoice price. A chart of single di equivalents may be prepared; and whenever a series is offered repeatedly, the one singl equal to the series can be applied to the l
	The single discount equivalent expedites co of prices containing a series of discounts.

PRICING MANUFACTURED GOODS

Level II

Content	Rationale
counts	A manufacturer or wholesaler usually has a catalog listing his merchandise for sale subject to 2 or more discounts or a *series of trade discounts*. These may be published separately, and are revised whenever costs change. Depending upon what level a buyer is in the channel of distribution, he may be given 2 or 3 discounts. Wholesalers and distributors usually are entitled to more discounts because of dealing in larger quantities than the retailers. If the manufacturer offers the trade discounts of 25%, 10%, and 5%, the retailer would probably receive only 1 or 2 of the discounts.
nt Equivalent	Whenever trade discount series are offered, it is convenient to have a single discount which is equivalent to the series. This simplifies the calculation of the invoice price. A chart of single discount equivalents may be prepared; and whenever a particular series is offered repeatedly, the one single discount equal to the series can be applied to the list price. The single discount equivalent expedites comparison of prices containing a series of discounts.

Performance Objectives

Given:

. A catalog list price and

. a series of discounts,

the student will determine:

. the amount of discount offered and

. the invoice price.

Given:

. A catalog list price and

. a series of 2, 3, or 4 discounts,

the student can find:

. the single discount equivalent and

. the invoice price, using the single discount equivalent.

Illustrative Problems

A company lists an air conditioner at $320
20%, and 10%. What will be the invoice pri
air conditioner?

$$\begin{array}{rr} & \$320.00 \\ 1/4\ - & \underline{80.00} \\ & 240.00 \\ 1/5\ - & \underline{48.00} \\ & 192.00 \\ 1/10\ - & \underline{19.20} \\ & \$172.80 \end{array}$$ invoice price

A wholesaler buys TV sets for $420 less 25%
10%. What single discount is equivalent to
discount series? What is the invoice price
wholesaler?

.25 + .20 = .45 .40 + .10 = .50
.25 x .20 = .05 .40 x .10 = .04
.45 - .05 = .40 .50 - .04 = .46 = 46% s
equiv
disco

OR

$$\begin{array}{rrrrrr} 1.00 & .75 & .75 & .60 & .60 & 1.00 \\ \underline{-.25} & \underline{x.20} & \underline{-.15} & \underline{x.10} & \underline{-.06} & \underline{-.54} \\ .75 & .15 & .60 & .06 & .54 & .46 \end{array}$$ single
discoun

$420 x .46 = $193.20 trade discount

$420 - 193.20 = $226.80 invoice price

Performance Objectives

ist price and

discounts,

ill determine:

of discount offered and

price.

list price and

2, 3, or 4 discounts,

can find:

discount equivalent and

price, using the single discount

.

Illustrative Problems

A company lists an air conditioner at \$320 less 25%, 20%, and 10%. What will be the invoice price of the air conditioner?

$$\begin{array}{lr} & \$320.00 \\ 1/4 - & \underline{80.00} \\ & 240.00 \\ 1/5 - & \underline{48.00} \\ & 192.00 \\ 1/10 - & \underline{19.20} \\ & \$172.80 \text{ invoice price} \end{array}$$

A wholesaler buys TV sets for \$420 less 25%, 20%, and 10%. What single discount is equivalent to the made discount series? What is the invoice price to the wholesaler?

$$\begin{array}{ll} .25 + .20 = .45 & .40 + .10 = .50 \\ .25 \times .20 = .05 & .40 \times .10 = .04 \\ .45 - .05 = .40 & .50 - .04 = .46 = 46\% \text{ single equivalent discount} \end{array}$$

OR

$$\begin{array}{rrrrrr} 1.00 & .75 & .75 & .60 & .60 & 1.00 \\ \underline{-.25} & \underline{\text{x}.20} & \underline{-.15} & \underline{\text{x}.10} & \underline{-.06} & \underline{-.54} \\ .75 & .15 & .60 & .06 & .54 & .46 \text{ single equivalent discount} \end{array}$$

\$420 x .46 = \$193.20 trade discount

\$420 - 193.20 = \$226.80 invoice price

PRICING MANUFACTURED GOODS

Level II

Content	Rationale
Determining List Price	For a number of reasons the retailer may the original list price. This can be obt know the percent of discount and the net
Additional Discount	When merchandise is reduced for sale, an reduction is generally known by the selle buyer. There are times when additional d given to clear the remainder of the unsol Both the seller and the buyer may be inte knowing what percent of reduction the add amount represents.

PRICING MANUFACTURED GOODS

Level II

Content

Rationale

For a number of reasons the retailer may want to know the original list price. This can be obtained if you know the percent of discount and the net price.

When merchandise is reduced for sale, an advertised reduction is generally known by the seller and the buyer. There are times when additional discounts are given to clear the remainder of the unsold merchandise.

Both the seller and the buyer may be interested in knowing what percent of reduction the additional amount represents.

Performance Objectives

Given:

. The price paid for merchandise and

. the percent of trade discount received,

the student will compute:

. the percent to which the invoice price is equivalent and

. the list price.

Given:

. The regular selling price of merchandise,

. the percent of markdown, and

. the final selling price,

the student can determine:

. the amount of the additional discount and

. the percent of additional discount.

Illustrative Problems

A retailer pays $480.00 for a color te
after deducting a trade discount of 20
the list price?

100% list price
-20% trade discount
80% invoice price

$480.00 ÷ .80 = $600 list price

Hall Brothers sell chairs at $180 each
What additional percent of discount di
a sale where these chairs were marked
for $100?

$180 x 1/3 = $60 discount
$180 - 60 = $120
$120 - 100 = $20 additional discount
$20 ÷ 120 = 16 2/3% additional percent

Performance Objectives

ce paid for merchandise and

cent of trade discount received,

nt will compute:

cent to which the invoice price is
ent and

t price.

ular selling price of merchandise,

cent of markdown, and

al selling price,

nt can determine:

unt of the additional discount and

cent of additional discount.

Illustrative Problems

A retailer pays $480.00 for a color television set after deducting a trade discount of 20%. What was the list price?

100% list price
-20% trade discount
80% invoice price

$480.00 ÷ .80 = $600 list price

Hall Brothers sell chairs at $180 each, less 33 1/3%. What additional percent of discount did they give on a sale where these chairs were marked down and sold for $100?

$180 x 1/3 = $60 discount
$180 - 60 = $120
$120 - 100 = $20 additional discount
$20 ÷ 120 = 16 2/3% additional percent of discount

WHOLESALE DISCOUNTS

Level I

Content	Rationale
Cash Discounts	Manufacturers and middlemen will give a *cash* from the invoice price to encourage their cust to pay promptly. Whatever amount is saved by within a discount period may be realized as a profit to the businessman, or may be passed o consumer in terms of a lower retail price.
Quantity Discounts	Since most manufacturers prefer not to store quantities of unsold goods, they will often e their customers to buy in larger lots by offe *quantity discounts*. This will reduce the man costs of warehousing and, at the same time, h distribute goods closer to the points of fina

WHOLESALE DISCOUNTS

Level I

Content

Rationale

Manufacturers and middlemen will give a *cash discount* from the invoice price to encourage their customers to pay promptly. Whatever amount is saved by paying within a discount period may be realized as additional profit to the businessman, or may be passed on to the consumer in terms of a lower retail price.

Since most manufacturers prefer not to store large quantities of unsold goods, they will often encourage their customers to buy in larger lots by offering them *quantity discounts*. This will reduce the manufacturer's costs of warehousing and, at the same time, help to distribute goods closer to the points of final sale.

Performance Objectives	Illustrative Problems
Given: . The invoice price of goods, . the invoice date, and . the cash discount terms, the student will find: . the last date of payment for a discount, . the amount of cash discount, and . the net cash price paid for the invoice.	An invoice of goods dated September 23 amounts with terms of 3/10, n/30. What amount of mone needed to pay this invoice on October 13? September 23 to October 13 = 20 days Therefore, $375.00 x .03 = $11.25 cash discoun $375.00 - $11.25 = $363.75 amount of payment
Given: . A rate of quantity discount and . the units purchased at the regular unit price, the student can calculate: . the total price paid and . the amount saved by purchasing in large quantity.	In order to encourage retailers to purchase in quantities, a manufacturing company grants a q discount of 12 1/2%, if 100 units are purchase the units cost $28.40 each, how much will a re save if he takes advantage of the quantity dis by buying 120 units? $28.40 x 100 = $2,840 gross cost $2,840 x 1/8 = $355 quantity discount

Performance Objectives

rice of goods,

ate, and

ount terms,

l find:

of payment for a discount,

cash discount, and

price paid for the invoice.

ntity discount and

chased at the regular unit price,

calculate:

ce paid and

ved by purchasing in large quantity.

Illustrative Problems

An invoice of goods dated September 23 amounts to $375 with terms of 3/10, n/30. What amount of money is needed to pay this invoice on October 13?

September 23 to October 13 = 20 days

Therefore, $375.00 x .03 = $11.25 cash discount

$375.00 - $11.25 = $363.75 amount of payment

In order to encourage retailers to purchase in larger quantities, a manufacturing company grants a quantity discount of 12 1/2%, if 100 units are purchased. If the units cost $28.40 each, how much will a retailer save if he takes advantage of the quantity discount by buying 120 units?

$28.40 x 100 = $2,840 gross cost

$2,840 x 1/8 = $355 quantity discount

WHOLESALE DISCOUNTS

Level II

Content	Rationale
Introducing More Than Two Terms	If the purchaser is not in a position to cash discount offered in the terms, a sma may be included as an inducement to make second deadline. For example, the terms stated as: 3/10, 1/20, n/30. The first 10 days after the invoice date; the secon 20 days. Therefore a 1% discount would b payment is made within 11 to 20 days of t date.
E.O.M.	To simplify billing procedure and payment it is common practice to offer cash disco payment within a specific number of days *end of the month* in which the invoice is Regardless of what day in a month the inv dated, the cash discount applies if payme within the specified number of days in th A bill with terms: 2%, 10 days, E.O.M. w purchaser to deduct a 2% cash discount an the invoice date up to the 10th day of th

WHOLESALE DISCOUNTS

Level II

Content	Rationale
han Two Terms	If the purchaser is not in a position to take the first cash discount offered in the terms, a smaller discount may be included as an inducement to make payment by a second deadline. For example, the terms may be stated as: 3/10, 1/20, n/30. The first deadline is 10 days after the invoice date; the second deadline is 20 days. Therefore a 1% discount would be allowed if payment is made within 11 to 20 days of the invoice date.
	To simplify billing procedure and payment of invoices, it is common practice to offer cash discounts for payment within a specific number of days after the *end of the month* in which the invoice is dated. Regardless of what day in a month the invoice is dated, the cash discount applies if payment is made within the specified number of days in the next month. A bill with terms: 2%, 10 days, E.O.M. will allow the purchaser to deduct a 2% cash discount anytime after the invoice date up to the 10th day of the next month.

Performance Objectives

Given:

- The invoice price of goods,
- the invoice date,
- the cash discount terms, and
- the date of payment,

the student will determine:

- which cash discount may be taken,
- the amount of the cash discount, and
- the net amount of the invoice.

Given:

- The invoice price of goods,
- the invoice date,
- the cash discount terms stated to include E.O.M., and
- the date of payment,

the student can find:

- the last date a cash discount may be taken,
- the amount of the cash discount, and
- the net amount of the invoice.

Illustrative Pr

A merchant received an invoice
less a trade discount of 25%,
5/20, 2/45, n/90. What is the
written on July 1 to pay the i

$360 x 1/4 = $90 trade discoun

$360 - 90 = $270 invoice price

$270 x .02 = $5.40 cash discou

$270 - 5.40 = $264.60 amount o

Performance Objectives

price of goods,

date,

count terms, and

payment,

ll determine:

iscount may be taken,

f the cash discount, and

nt of the invoice.

price of goods,

date,

count terms stated to include

payment,

n find:

e a cash discount may be taken,

f the cash discount, and

nt of the invoice.

Illustrative Problems

A merchant received an invoice dated June 2 for $360, less a trade discount of 25%, and subject to terms of 5/20, 2/45, n/90. What is the amount of the check written on July 1 to pay the invoice?

$360 x 1/4 = $90 trade discount

$360 - 90 = $270 invoice price

$270 x .02 = $5.40 cash discount

$270 - 5.40 = $264.60 amount of check

WHOLESALE DISCOUNTS

Level II

Content	Rationale
Borrowing To Take Advantage of Discounts	It is common practice for business for short periods of time in order of the cash discount offered for p invoices. A 2% or 3% cash discoun promptly is substantially more tha charged in borrowing the net invoi 30 days.

****

PRICING GOODS

Level I

Marking Goods in Code	Most sellers mark the cost price of in code. This may prevent customer who send out comparison shoppers, f the seller's markup.

WHOLESALE DISCOUNTS

Level II

Content	Rationale
tage of Discounts	It is common practice for businessmen to borrow money for short periods of time in order to take advantage of the cash discount offered for prompt payment of invoices. A 2% or 3% cash discount saved by paying promptly is substantially more than the interest charged in borrowing the net invoice amount for 20 or 30 days.

****

PRICING GOODS

Level I

Most sellers mark the cost price of their merchandise in code. This may prevent customers, and competitors who send out comparison shoppers, from determining the seller's markup.

Performance Objectives

Given:

- The invoice price of goods,
- the cash discount terms, and
- the bank's terms for a loan,

the student will figure:

- the net amount to pay the invoice,
- the bank's interest charge on a loan for the amount needed, and
- the amount saved by borrowing.

Illustrative Probl

A retailer paid cash for merchandi
$1,200, less a cash discount of 5%
net amount of money from a bank fo
How much did he save by borrowing
cash?

$1,200 x .05 = $60 cash discount

$1,200 - 60 = $1,140 cash price

$11.40 = 6% interest for 6
1/3 3.80 = 6% interest for 2
15.20 = 6% interest for 8
1/4 3.80 = 1 1/2% interest f
19.00 = 7 1/2% interest f

$60.00 - 19.00 = $41.00 am

****

Given:

- The cost code of an item and
- the item's selling price,

the student should be able to determine:

- the item's cost price and
- the markup or gross profit realized on the sale of the item.

In pricing its merchandise, a stor
word "BLACKSMITH" for the numbers
8, 9, 0, with an X for repeating n
the gross profit on an article tha
and bears the code LXTS?

B L A C K S M I T H (X)
1 2 3 4 5 6 7 8 9 0

LXTS = $22.96

$31.75 - 22.96 = $8.79 gross profi

formance Objectives

of goods,
terms, and
for a loan,
gure:
pay the invoice,
st charge on a loan for the
d
by borrowing.

Illustrative Problems

A retailer paid cash for merchandise selling for \$1,200, less a cash discount of 5%. He borrowed the net amount of money from a bank for 80 days at 7 1/2%. How much did he save by borrowing the money and paying cash?

\$1,200 x .05 = \$60 cash discount

\$1,200 - 60 = \$1,140 cash price

\$11.40 = 6% interest for 60 days
1/3 3.80 = 6% interest for 20 days
15.20 = 6% interest for 80 days
1/4 3.80 = 1 1/2% interest for 80 days
19.00 = 7 1/2% interest for 80 days

\$60.00 - 19.00 = \$41.00 amount saved

****

an item and
g price,
be able to determine:
rice and
ss profit realized on the sale

In pricing its merchandise, a store used the code word "BLACKSMITH" for the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, with an X for repeating numbers. What is the gross profit on an article that sells for \$31.75 and bears the code LXTS?

B	L	A	C	K	S	M	I	T	H	(X)
1	2	3	4	5	6	7	8	9	0	

LXTS = \$22.96

\$31.75 - 22.96 = \$8.79 gross profit

PRICING GOODS

Level II

Content	Rationale
Determining Selling Price . Markup based on cost . Markup based on selling price	A merchant must price his merchandise so that it both competitive and at the same time gives him fair return for his efforts. The retail pricing his goods, therefore, becomes a critical calcula There are 2 bases upon which to make the calcula If the markup percent is based upon cost, the mer multiplies his cost by the markup rate and adds to his cost to arrive at the selling price. If the merchant wants to base his markup upon th selling price, he uses 100% for the selling pric then subtracts the percent of markup from 100% t arrive at the percent to use for the cost price. can then divide that cost percentage into the co price to obtain the selling price.

PRICING GOODS

Level II

Content

rice

ost

elling price

Rationale

A merchant must price his merchandise so that it is both competitive and at the same time gives him a fair return for his efforts. The retail pricing of his goods, therefore, becomes a critical calculation.

There are 2 bases upon which to make the calculation. If the markup percent is based upon cost, the merchant multiplies his cost by the markup rate and adds this to his cost to arrive at the selling price.

If the merchant wants to base his markup upon the selling price, he uses 100% for the selling price and then subtracts the percent of markup from 100% to arrive at the percent to use for the cost price. He can then divide that cost percentage into the cost price to obtain the selling price.

Performance Objectives

Given:

- The cost of goods and
- the percent of profit based upon cost,

the student can arrive at:

- the markup and
- the selling price.

Given:

- The cost of goods and
- the percent of profit based upon selling price,

the student will compute:

- the cost price percent and
- the selling price.

Illustrative

A merchant paid $264 for 12 ch
paid freight charges totaling
At what price must he sell ea
gain 25% profit on their total

$264.00 + 21.60 = $285.60 tota

$285.60 x 1/4 = $71.40 profit

$285.60 + 71.40 = $357.00 sell

$375.00 ÷ 12 = $29.75 selling

Wallets can be purchased from
each. The retailer wishes to
33 1/3% of the selling price.
for a wallet in order to make

100% = selling price
- 33 1/3% = markup
66 2/3% = cost

$3.00 ÷ 2/3 = $4.50 selling

Performance Objectives

ods and

f profit based upon cost,

arrive at:

d

rice.

ods and

f profit based upon selling price,

l compute:

e percent and

rice.

Illustrative Problems

A merchant paid $264 for 12 chairs. In addition, he paid freight charges totaling $21.60 on this purchase. At what price must he sell each chair if he wishes to gain 25% profit on their total cost?

$264.00 + 21.60 = $285.60 total cost

$285.60 x 1/4 = $71.40 profit

$285.60 + 71.40 = $357.00 selling price of 12

$375.00 ÷ 12 = $29.75 selling price of 1

Wallets can be purchased from a wholesaler for $3.00 each. The retailer wishes to make a gross profit of 33 1/3% of the selling price. How much must he charge for a wallet in order to make this gross profit?

100% = selling price
- 33 1/3% = markup
66 2/3% = cost

$3.00 ÷ 2/3 = $4.50 selling price

PRICING GOODS

Level II

Content	Rationale
Determining Rate of Markup . Based on cost . Based on selling price	It is convenient for a businessman markup rate is for each item of mer men use percents as a basis of comp them a freedom of discussion which if they were to discuss dollars. necessary to know upon what basis t figured--cost or selling price--bef be made.
Determining Gross Profit on Varied Price Lots	Selling merchandise at reduced price to dispose of an entire lot rather t unsold items. However, when merchan marked down several times due to sty damage, several calculations are nee gross profit for the entire lot.

PRICING GOODS

Level II

Content	Rationale
rkup rice	It is convenient for a businessman to know what his markup rate is for each item of merchandise. Businessmen use percents as a basis of comparison which allows them a freedom of discussion which they might not have if they were to discuss dollars. Further, it is necessary to know upon what basis the percents are figured--cost or selling price--before comparisons can be made.
fit on Varied Price Lots	Selling merchandise at reduced prices helps the retailer to dispose of an entire lot rather than to carry over unsold items. However, when merchandise has been marked down several times due to style changes or damage, several calculations are needed to arrive at a gross profit for the entire lot.

Performance Objectives	Illustrative Probl
Given: . The cost price of goods, . the selling price of goods, and . whether the percent is based on cost or selling price, the student will determine the percent of markup, based on cost or selling price.	Gilbert purchases bowling balls fo sells each bowling ball for $18. 1. What is Gilbert's percent of m bowling ball if she bases the 2. What is Gilbert's percent of m bowling ball if she bases the selling price? $18.00 - 14.40 = $3.60 markup 1) $3.60 ÷ 14.40 = 25% markup 2) $3.60 ÷ 18.00 = 20% markup price
Given: . The cost per item of merchandise purchased and . the retail selling prices of this merchandise, including any markdowns, the student can find: . the total cost of the merchandise, . the total selling price, and . the gross profit realized on the entire lot.	A clothier purchased 40 suits for for transportation charges on the 22 of the suits at $119 each, 10 a the remainder at $88 each. What w on the entire lot? $3,400 + 38 = $3,438 total cost $119 x 22 = $2,618 $105 x 10 = $1,050 $88 x 8 = $704 $2,618 + 1,050 + 704 = $4,372 sell $4,372 - 3,438 = $934 gross profit

Performance Objectives

of goods,

ice of goods, and

rcent is based on cost or selling

determine the percent of markup,
selling price.

tem of merchandise purchased and

ling prices of this merchandise,
narkdowns,

find:

of the merchandise,

ing price, and

it realized on the entire lot.

Illustrative Problems

Gilbert purchases bowling balls for $14.40 each. She sells each bowling ball for $18.

1. What is Gilbert's percent of markup on each bowling ball if she bases the markup on the cost?
2. What is Gilbert's percent of markup on each bowling ball if she bases the markup on the selling price?

$18.00 - 14.40 = $3.60 markup

1) $3.60 ÷ 14.40 = 25% markup based on cost

2) $3.60 ÷ 18.00 = 20% markup based on selling price

A clothier purchased 40 suits for $3,400 and paid $38 for transportation charges on the purchase. He sold 22 of the suits at $119 each, 10 at $105 each, and the remainder at $88 each. What was his gross profit on the entire lot?

$3,400 + 38 = $3,438 total cost
$119 x 22 = $2,618
$105 x 10 = $1,050
$88 x 8 = $704
$2,618 + 1,050 + 704 = $4,372 selling price
$4,372 - 3,438 = $934 gross profit

RETAIL DISCOUNTS

Level I

Content	Rationale
Determining the Sale Price	Most retail businesses find it ne times of the year (end of season, etc.) to reduce the selling price merchandise. This will avoid the large quantities, thereby saving Furthermore, the risks of theft, seasonal changes are reduced.

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RETAIL DISCOUNTS

Level II

Content	Rationale
Calculating Rate of Discount	The retailer is anxious to attrac ticularly when he has markdown sa markdown may state a given dollar example, "regularly $15, now sell reduced to $9.99." However, the retailer may prefer discount in terms of a percent. will compute the rate of discount even more attractive to prospecti fractional or percent markdown at or "reductions of 20% to 33 1/3%. The customer should be able to co offered by two or more merchants, selling prices before and after m

RETAIL DISCOUNTS

Level I

Content

Rationale

Price

Most retail businesses find it necessary at different times of the year (end of season, after Christmas, etc.) to reduce the selling price of their unsold merchandise. This will avoid the necessity of storing large quantities, thereby saving storage costs. Furthermore, the risks of theft, spoilage, and seasonal changes are reduced.

****

RETAIL DISCOUNTS

Level II

Discount

The retailer is anxious to attract customers, particularly when he has markdown sales. The advertised markdown may state a given dollar reduction, as for example, "regularly $15, now selling for $12" or "$15, reduced to $9.99."

However, the retailer may prefer to advertise the discount in terms of a percent. In that case, he will compute the rate of discount, and it might appear even more attractive to prospective buyers to see a fractional or percent markdown at "1/5 to 1/3 off," or "reductions of 20% to 33 1/3%."

The customer should be able to compare retail discounts offered by two or more merchants, if he knows the selling prices before and after markdown.

Performance Objectives	Illustrative Problems
Given: . The regular selling price of merchandise and . the advertised rate of markdown, the student will calculate: . the amount of the markdown and . the sale price.	During a sale, the price of an automobil marked down 24% from $41.25. What is th of the tire? $41.25 x .24 = $9.90 discount $41.25 - $9.90 = $31.35 selling price

****

Given: . The original selling price of merchandise and . the marked price after a reduction, the student can determine: . the fractional part the discount is of the original price and . the rate of discount to which that fraction is equivalent.	A shirt that had been marked $7.95 was s sale for $5.30. What percent of discoun $7.95 - $5.30 = $2.65 discount $\frac{\$2.65}{7.95} = 1/3 = 33\ 1/3\%$ rate

formance Objectives	Illustrative Problems
ng price of merchandise and te of markdown, lculate: markdown and	During a sale, the price of an automobile tire is marked down 24% from \$41.25. What is the sale price of the tire? \$41.25 x .24 = \$9.90 discount \$41.25 - \$9.90 = \$31.35 selling price

****

ing price of merchandise and after a reduction, ermine: rt the discount is of the d unt to which that fraction is	A shirt that had been marked \$7.95 was sold during a sale for \$5.30. What percent of discount was allowed? \$7.95 - \$5.30 = \$2.65 discount $\frac{\$2.65}{7.95}$ = 1/3 = 33 1/3% rate

INSTALLMENT SELLING AND FINANCING

Level I

Content	Rationale
Calculating Installment Price	One of the unique features of the A been the introduction of *installmen* controlled, they have stimulated sa it possible for more people to enjo owning certain products while they However, the additional clerical wo which the seller takes when he sell plan are justification for his addi selling price an installment carryi customer then has the choice of pur cash or paying an additional charge plan while he uses the article.
Determining the Weekly or Monthly Payment	

INSTALLMENT SELLING AND FINANCING

Level I

Content

ent Price

kly or Monthly Payment

Rationale

One of the unique features of the American economy has been the introduction of *installment sales*. Properly controlled, they have stimulated sales and have made it possible for more people to enjoy the benefits of owning certain products while they are being paid for. However, the additional clerical work and the risks which the seller takes when he sells on the installment plan are justification for his adding to the original selling price an installment carrying charge. The customer then has the choice of purchasing goods for cash or paying an additional charge on the installment plan while he uses the article.

Performance Objectives

Given:

- The original cash price of an item,
- the amount of down payment required at the time of the sale,
- the carrying charge added for an installment sale, and
- the length of time in years, months, or weeks,

the student will compute:

- the total installment price and
- the amount by which an installment price exceeds the cash price.

Given:

- The original cash price,
- the amount of down payment, and
- the number of installments to be made,

the student can determine:

- the balance to be paid on the installment sale and
- the amount of each installment.

Illustrative Probl

A used car may be purchased for $1
installment plan by paying $400 do
month for 15 months. By how many
installment plan price exceed the

$87.50 x 15 = $1,312.50 total paym

$1,312.50 + 400.00 =$1,712.50 inst

$1,712.50 - 1,550.00 = $162.50 ins

Sator can purchase a lawn tractor
plan for a total cost of $614.88 b
and the balance in 12 equal monthl
What will be the amount of each mo

$614.88 - 60.00 = $554.88 balance

$554.88 ÷ 12 = $46.24 monthly paym

Performance Objectives

l cash price of an item,

of down payment required at the time

.

g charge added for an installment

of time in years, months, or weeks,

ill compute:

nstallment price and

by which an installment price exceeds

ice.

l cash price,

of down payment, and

of installments to be made,

an determine:

to be paid on the installment sale and

of each installment.

Illustrative Problems

A used car may be purchased for $1,550 cash or on the installment plan by paying $400 down and $87.50 per month for 15 months. By how many dollars does the installment plan price exceed the cash price?

$87.50 x 15 = $1,312.50 total payments

$1,312.50 + 400.00 =$1,712.50 installment price

$1,712.50 - 1,550.00 = $162.50 installment charge

Sator can purchase a lawn tractor on the installment plan for a total cost of $614.88 by paying $60 down and the balance in 12 equal monthly installments. What will be the amount of each monthly installment?

$614.88 - 60.00 = $554.88 balance to pay

$554.88 ÷ 12 = $46.24 monthly payment

INSTALLMENT SELLING AND FINANCING

Level I

Content	Rationale
Determining the Number of Payments To Repay in Full	
Comparing Costs of Installment Financing From Various Lending Agencies	The competition among lenders is strong; therefore the borrower should find which lender charges the least amount on a given loan.

Performance Objectives

Given:

- The cash price,
- the amount of down payment, and
- the amount of each installment,

the pupil will calculate the number of payments to be made to repay in full.

Given:

- The amount to be borrowed,
- the term of the loan, and
- either the amount of each installment,

  OR

  a table indicating payments for various loans from different lending agencies,

the student will determine:

- the cost of borrowing from each agency and
- which agency offers the best terms for a given loan.

Illustrative Problems

Twiss buys an automatic dryer for a total
$293. If she makes a down payment of $8
balance in equal monthly installments of
many months will it take her to pay the
balance?

$293 - 83 = $210 balance to pay

$210 ÷ 14 = 15 monthly payments

rmance Objectives

ayment, and

installment,

te the number of payments to
ll.

rrowed,

, and

each installment,

OR

ayments for various loans
ng agencies,

rmine:

g from each agency and

the best terms for a given

Illustrative Problems

Twiss buys an automatic dryer for a total cost of $293. If she makes a down payment of $83 and pays the balance in equal monthly installments of $14, how many months will it take her to pay the remaining balance?

$293 - 83 = $210 balance to pay

$210 ÷ 14 = 15 monthly payments

INSTALLMENT SELLING AND FINANCING

Level II

Content	Rationale
Calculating Annual Percentage by Use of Federal Reserve Board Tables	Before signing an installment contract, the b should determine what annual interest rate he paying. There are Federal and State laws against usu establish maximum annual interest rates; but borrower can easily be led into thinking he h bargain at 1 1/2% per month interest, when if really understood the computation, he would k paying an annual rate of 18%.

INSTALLMENT SELLING AND FINANCING

Level II

Content	Rationale
ercentage by Use of Federal s	Before signing an installment contract, the buyer should determine what annual interest rate he is paying. There are Federal and State laws against usury which establish maximum annual interest rates; but the borrower can easily be led into thinking he has a bargain at 1 1/2% per month interest, when if he really understood the computation, he would know he is paying an annual rate of 18%.

Performance Objectives

Given:

- The amount to be financed,
- the finance charge,
- the number of payments, and
- Federal Reserve Board tables,

the learner should be able to find the annual percentage rate for borrowing.

Illustrative

Finding the rate for regular t

Single advance transactions i
and equal payment periods

FC/100 = finance charge per $
(finance charge) X 100 divide

Monthly payment (or multiple
Example: Finance charge
Amount financed
Number of payment

Solution:
1) FC/100 = $32.56 X 100 divi
2) Read across on the 12 paym
rate table to the value ne
$9.87 in the 17.75% column

Annual Percentage Rate Table for Monthly Payment Plans

Number of	Annual Percentage Rate										
Payments	14.00%	14.25%	14.50%	14.75%	15.00%	15.25%	15.50%	15.75%	16.00%	16.25%	16.50%	16.75%
	(Finance Charge Per $100 of Amount Financed)											
1	1.17	1.19	1.21	1.23	1.25	1.27	1.29	1.31	1.33	1.35	1.37	1.40
2	1.75	1.78	1.82	1.85	1.88	1.91	1.94	1.97	2.00	2.04	2.07	2.10
3	2.34	2.38	2.43	2.47	2.51	2.55	2.59	2.64	2.68	2.72	2.76	2.80
4	2.93	2.99	3.04	3.09	3.14	3.20	3.25	3.30	3.36	3.41	3.46	3.51
5	3.53	3.59	3.65	3.72	3.78	3.84	3.91	3.97	4.04	4.10	4.16	4.23
6	4.12	4.20	4.27	4.35	4.42	4.49	4.57	4.64	4.72	4.79	4.87	4.94
7	4.72	4.81	4.89	4.98	5.06	5.15	5.23	5.32	5.40	5.49	5.58	5.66
8	5.32	5.42	5.51	5.61	5.71	5.80	5.90	6.00	6.09	6.19	6.29	6.38
9	5.92	6.03	6.14	6.25	6.35	6.46	6.57	6.68	6.78	6.89	7.00	7.11
10	6.53	6.65	6.77	6.88	7.00	7.12	7.24	7.36	7.48	7.60	7.72	7.84
11	7.14	7.27	7.40	7.53	7.66	7.79	7.92	8.05	8.18	8.31	8.44	8.57
12	7.74	7.89	8.03	8.17	8.31	8.45	8.59	8.74	8.88	9.02	9.16	9.30

Performance Objectives

be financed,

harge,

payments, and

ve Board tables,

uld be able to find the annual
for borrowing.

Illustrative Problems

Finding the rate for regular transactions

Single advance transactions involving equal payments and equal payment periods

FC/100 = finance charge per $100 of amount financed = (finance charge) X 100 divided by (amount financed)

Monthly payment (or multiple or fraction thereof)

Example:	Finance charge	$ 32.56
	Amount financed	$332.20
	Number of payments	12

Solution:
1) FC/100 = $32.56 X 100 divided by $332.20 = $9.80
2) Read across on the 12 payment line of the monthly rate table to the value nearest $9.80. This is $9.87 in the 17.75% column.

Annual Percentage Rate Table for Monthly Payment Plans

Annual Percentage Rate													
14.50%	14.75%	15.00%	15.25%	15.50%	15.75%	16.00%	16.25%	16.50%	16.75%	17.00%	17.25%	17.50%	17.75%
(Finance Charge Per $100 of Amount Financed)													
1.21	1.23	1.25	1.27	1.29	1.31	1.33	1.35	1.37	1.40	1.42	1.44	1.46	1.48
1.82	1.85	1.88	1.91	1.94	1.97	2.00	2.04	2.07	2.10	2.13	2.16	2.19	2.22
2.43	2.47	2.51	2.55	2.59	2.64	2.68	2.72	2.76	2.80	2.85	2.89	2.93	2.97
3.04	3.09	3.14	3.20	3.25	3.30	3.36	3.41	3.46	3.51	3.57	3.62	3.67	3.73
3.65	3.72	3.78	3.84	3.91	3.97	4.04	4.10	4.16	4.23	4.29	4.35	4.42	4.48
4.27	4.35	4.42	4.49	4.57	4.64	4.72	4.79	4.87	4.94	5.02	5.09	5.17	5.24
4.89	4.98	5.06	5.15	5.23	5.32	5.40	5.49	5.58	5.66	5.75	5.83	5.92	6.00
5.51	5.61	5.71	5.80	5.90	6.00	6.09	6.19	6.29	6.38	6.48	6.58	6.67	6.77
6.14	6.25	6.35	6.46	6.57	6.68	6.78	6.89	7.00	7.11	7.22	7.32	7.43	7.54
6.77	6.88	7.00	7.12	7.24	7.36	7.48	7.60	7.72	7.84	7.96	8.08	8.19	8.31
7.40	7.53	7.66	7.79	7.92	8.05	8.18	8.31	8.44	8.57	8.70	8.83	8.96	9.09
8.03	8.17	8.31	8.45	8.59	8.74	8.88	9.02	9.16	9.30	9.45	9.59	9.73	9.87

BANKING AND FINANCE

THE CHECKING ACCOUNT

COMPUTING INTEREST

BANK DISCOUNT

THE CHECKING ACCOUNT

Level I

Content	Rationale
Keeping Check Stub Records	Anyone using a checking account records of the balance in the a rule, will only pay a check if funds in the account. Therefor know the exact amount of money before issuing a check.
Reconciliation of Bank Statement . outstanding checks . service charge	As a rule, the bank sends each d statement which reports the depo and cleared, and bank service ch compares this report with his ow accuracy of both the bank record There are several ways to prepar statement. Teachers of Business aware of the form, printed on th bank statements, for preparing a ment. Students should be given this form when using bank reconc

CHECKS OUTSTANDING

Number	Amount	

Balance From Bank Statement $

Add Deposits Not Entered $

subtotal $

Subtract Outstanding Checks $

Total $

(This is your current balance
and should agree with checkbook

THE CHECKING ACCOUNT

Level I

Content

Records

Rationale

Anyone using a checking account should keep up-to-date records of the balance in the account. The bank, as a rule, will only pay a check if there are sufficient funds in the account. Therefore, it is necessary to know the exact amount of money one has in his account before issuing a check.

ank Statement

cks

As a rule, the bank sends each depositor a monthly statement which reports the deposits, the checks issued and cleared, and bank service charges. The depositor compares this report with his own records to check the accuracy of both the bank records and his records.

There are several ways to prepare a bank reconciliation statement. Teachers of Business Mathematics should be aware of the form, printed on the reverse side of some bank statements, for preparing a reconciliation statement. Students should be given practice in completing this form when using bank reconciliation statements.

CHECKS OUTSTANDING

	Amount	

Balance From Bank Statement $__________

Add Deposits Not Entered $__________

subtotal $__________

Subtract Outstanding Checks $__________

Total $__________

(This is your current balance
and should agree with checkbook balance.)

Performance Objectives

Given:

- Beginning balance or balance on previous check stub,
- deposits, and
- amounts of checks issued,

the pupil will find the current check stub balance.

Given:

- Current check stub balance,
- bank statement balance,
- outstanding checks, and
- service charges,

the student can prepare a bank reconciliation statement in acceptable business form, arriving at the same figure for the correct checkbook balance and the available bank balance.

Illustrative Problems

Joseph Marko had a checkbook balance of
bank statement balance of $505.30. Ther
charge of $2.25 reported on the bank sta
outstanding checks amounted to: $23.77,
$97.50. Prepare a reconciliation statem

Joseph Marko
Reconciliation Statement

Checkbook balance	$347.38	Bank stateme	
Deduct:		Deduct:	
Service charge	2.25	Outstanding	
			$23.77 38.90 97.50
Correct Checkbook Balance	$345.13	Available B Balance	

nce Objectives

alance on previous check

ed,
current check stub balance.

ance,
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d

a bank reconciliation
business form, arriving at
correct checkbook balance
alance.

Illustrative Problems

Joseph Marko had a checkbook balance of $347.38 and a bank statement balance of $505.30. There was a service charge of $2.25 reported on the bank statement. The outstanding checks amounted to: $23.77, $38.90, and $97.50. Prepare a reconciliation statement.

Joseph Marko
Reconciliation Statement

Checkbook balance	$347.38	Bank statement balance		$505.30
Deduct:		Deduct:		
Service charge	2.25	Outstanding checks		
			$23.77	
			38.90	
			97.50	160.17
Correct Checkbook Balance	$345.13	Available Bank Balance		$345.13

THE CHECKING ACCOUNT

Level II

Content	Rationale
Deposits in Transit	
Check Stub Errors . deposit omitted . check omitted . incorrect amounts . transposition	

Performance Objective

Given:

- . Current check stub balance,
- . bank statement balance,
- . outstanding checks,
- . service charges,
- . deposits in transit, and
- . miscellaneous discrepancies such as omissions, errors in recording,

the student can prepare a bank reconciliation statement in proper business form, arriving at the same figure for both the correct checkbook balance and the available bank balance.

Illustrative Problems

On May 1, James Nelson's bank statement showed a
balance of $733.70. His checkbook balance, on t
same date, was $554.63. A deposit for $135 had
been entered in the checkbook, while a deposit o
had been recorded twice in the checkbook by mist
Checks for the following amounts were outstandin
$21.50, $119.28, and $37.84. A comparison of th
statement with the checkbook showed that the fol
items which were not recorded in the checkbook h
been paid: a canceled check for $26.75 and a ch
of $1.50 for banking services. A deposit for $7
properly entered on the checkbook stub on April
had not been recorded on the bank statement. On
the canceled checks written for $46 had been mis
entered on the checkbook stub as $64. Prepare a
reconciliation statement using this longer form:

James Nelson
Reconciliation Statement
May 1

Checkbook balance	$554.63	Bank statement balan
Deduct: Deposit		Deduct:
entered twice	45.50	Outstanding checks
Check not recorded	26.75	
Service charge	1.50	
	$480.88	
Add:		Add:
Deposit omitted	$135.00	Deposit not recorded
Error in writing check	18.00	
	$153.00	
Correct Checkbook Balance	$633.88	Available Bank Balan

'erformance Objective

stub balance,

balance,

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discrepancies such as omissions,
rding,

prepare a bank reconciliation
per business form, arriving at the
both the correct checkbook balance
e bank balance.

Illustrative Problems

On May 1, James Nelson's bank statement showed a balance of $733.70. His checkbook balance, on the same date, was $554.63. A deposit for $135 had not been entered in the checkbook, while a deposit of $45.50 had been recorded twice in the checkbook by mistake. Checks for the following amounts were outstanding: $21.50, $119.28, and $37.84. A comparison of the statement with the checkbook showed that the following items which were not recorded in the checkbook had been paid: a canceled check for $26.75 and a charge of $1.50 for banking services. A deposit for $78.80, properly entered on the checkbook stub on April 30, had not been recorded on the bank statement. One of the canceled checks written for $46 had been mistakenly entered on the checkbook stub as $64. Prepare a reconciliation statement using this longer form:

James Nelson
Reconciliation Statement
May 1

Checkbook balance	$554.63	Bank statement balance	$733.70
Deduct: Deposit		Deduct:	
entered twice	45.50	Outstanding checks	21.50
Check not recorded	26.75		119.28
Service charge	1.50		37.84
	$480.88		$555.08
Add:		Add:	
Deposit omitted	$135.00	Deposit not recorded	$ 78.80
Error in writing			
check	18.00		
	$153.00		
Correct Checkbook		Available Bank Balance	
Balance	$633.88		$633.88

COMPUTING INTEREST

Level I

Content	Rationale
Accurate Interest - 365 days	The businessman often finds it to his advanta borrow money to conduct various business oper The interest charged for the use of money is a tant factor in deciding the amount he will bor the period of time he will carry the loan. While most commercial transactions are based o commercial year consisting of 12 months of 30 each, totaling 360 days, government transactio usually based on the 365 day or exact year bas
Banker's Interest . full formula - 360 days	In order to simplify calculation of interest, usually use the commercial year consisting of 12 months, and 30 days per month.
. 60 day - 6% method - 30, 60, 90, 120 days - 6 days and multiples of 6 days - conversion of time stated in months to time stated in days	There are a number of time-saving methods that allow one to arrive at the correct answers fas easier--once the skill is achieved. Essentially, 6% interest for 60 days is found ing the decimal point two places to the left o principal amount.

COMPUTING INTEREST

Level I

Content	Rationale
days	The businessman often finds it to his advantage to borrow money to conduct various business operations. The interest charged for the use of money is an important factor in deciding the amount he will borrow and the period of time he will carry the loan. While most commercial transactions are based on the commercial year consisting of 12 months of 30 days each, totaling 360 days, government transactions are usually based on the 365 day or exact year basis.
lays	In order to simplify calculation of interest, banks usually use the commercial year consisting of 360 days, 12 months, and 30 days per month.
lays oles of 6 days ne stated in months to time	There are a number of time-saving methods that will allow one to arrive at the correct answers faster and easier--once the skill is achieved. Essentially, 6% interest for 60 days is found by moving the decimal point two places to the left on the principal amount.

Performance Objectives	Illustrative Problems
Given: . The principal (amount borrowed), . the interest rate, and . the time period of the loan (number of days), the student can calculate the amount of interest charged.	Find the interest on \$1,460 at 6% for 75 days. I = P x R x T $\$1,460 \times \frac{6}{100} \times \frac{75}{365} = \$18.00$
Given: . The principal, . rate of 6%, and . multiples or fractional parts of 360, the student can find the interest amount.	Find the interest on \$1,460 at 6% for 75 days. I = P x R x T $\$1,460 \times \frac{6}{100} \times \frac{75}{360} = \$18.25$
Given: . The principal, . rate of 6%, and . time period in months or any multiples of 6, 60, or 360, the student can convert the time to days when necessary and find the amount of interest, using banker's method.	Find the interest on \$1,460 at 6% for 75 days. \$1,460 for 60 days at 6% = \$14.60 \$1,460 for 15 days at 6% = \$1,460 for $\frac{15}{60}$ (1/4) of \$14.60 = 3.65 \$1,460 for 75 days at 6% = \$18.25

COMPUTING INTEREST

Level I

Content

Banker's Interest

. finding the number of days between the two dates

Rationale

Collateral loans, unlike ordinary bank loans, a often payable on demand. The loan is payable wh the bank demands payment. The borrower may repa loan any time before the demand is made.

The borrower must find the period of time betwe day the loan was issued and the day payment was It is for this period of time the bank will cha interest.

COMPUTING INTEREST

Level I

Content	Rationale
f days between the two dates	Collateral loans, unlike ordinary bank loans, are often payable on demand. The loan is payable when the bank demands payment. The borrower may repay the loan any time before the demand is made.
	The borrower must find the period of time between the day the loan was issued and the day payment was made. It is for this period of time the bank will charge interest.

Performance Objectives

Given:

- The date the loan was issued and
- the date payment was made,

the student can calculate the number of days between the two dates for which interest will be charged.

Illustrative Problems

The student should count either the first or
of the loan but not both in the interest peri
should also note the number of days in the mo
whether it is a leap year.

rformance Objectives

n was issued and

was made,

lculate the number of days
tes for which interest will be

Illustrative Problems

The student should count either the first or last day of the loan but not both in the interest period. He should also note the number of days in the month and whether it is a leap year.

COMPUTING INTEREST

Level I

Content	Rationale
Banker's Interest . Finding the due date	A promissory note contains the *date* the loan is and the *time period* for which the money is borro The borrower must know the exact day the loan is so he can plan to meet his obligations on time.
. Savings accounts (no deposits or withdrawals) - whole dollar base - compounded quarterly	One of the most common methods of saving is to d money in an account at a savings bank. These in ments earn interest either semi-annually or quar The depositor can keep track of the growth of hi by reviewing the passbook in which the bank reco deposits, withdrawals, and interest earned.

COMPUTING INTEREST

Level I

Content

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o deposits or withdrawals)
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erly

Rationale

A promissory note contains the *date* the loan is issued and the *time period* for which the money is borrowed.

The borrower must know the exact day the loan is due so he can plan to meet his obligations on time.

One of the most common methods of saving is to deposit money in an account at a savings bank. These investments earn interest either semi-annually or quarterly.

The depositor can keep track of the growth of his money by reviewing the passbook in which the bank records all deposits, withdrawals, and interest earned.

Performance Objectives

Given:

. The date of the note and

. the period of time in days, months, or year,

the student can find the exact day the loan is due.

Given:

. The beginning deposit,

. no additional deposits or withdrawals,

. the annual rate of interest to be compounded quarterly, and

. a specific future date of any quarter of the year,

the student can calculate the amount on deposit on the date specified.

Illustrative Problems

Donald Hill deposited $800 on April 1 in a s bank that pays 5% interest compounded quarte much did Hill have on deposit on October 1, no additional deposits or withdrawals?

Date	Deposit	Interest	B
April	$800.00		$
July 1		$10.00	
October 1		10.13	

(5% ÷ 4 = 1.25% quarterly rate)

Performance Objectives

he note and
time in days, months, or year,
find the exact day the loan is due.

deposit,
deposits or withdrawals,
ite of interest to be compounded
nd
ature date of any quarter of the year,
n calculate the amount on deposit on
fied.

Illustrative Problems

Donald Hill deposited $800 on April 1 in a savings bank that pays 5% interest compounded quarterly. How much did Hill have on deposit on October 1, if he made no additional deposits or withdrawals?

Date	Deposit	Interest	Balance
April	$800.00		$800.00
July 1		$10.00	810.00
October 1		10.13	820.13

(5% ÷ 4 = 1.25% quarterly rate)

COMPUTING INTEREST

Level II

Content	Rationale
Finding Interest for any Number of Days	
Savings Accounts With Deposits and Withdrawals	It is important that the depositor be informed method used by his savings bank in determining amount will draw interest when deposits or wit are made between interest dates. One of the methods used is to pay interest on t lowest or minimum balance between quarters.

COMPUTING INTEREST

Level II

Content	Rationale
or any Number of Days	
th Deposits and Withdrawals	It is important that the depositor be informed of the method used by his savings bank in determining what amount will draw interest when deposits or withdrawals are made between interest dates. One of the methods used is to pay interest on the lowest or minimum balance between quarters.

Performance Objectives

Given:

- The face value of a note,
- the interest rate, and
- the period of time,

the pupil will calculate the interest:

- using combinations which are aliquot parts of 60 and 6 days,
- for any number of days using the 1-day method, and
- for rates other than 6%.

Given:

- The beginning balance on deposit,
- the annual rate of interest,
- the periods of time at which the bank pays interest (quarterly or given in dates such as January 2, April 1, July 1, and October 1),
- the amounts and days of deposits, and
- the amounts and days of withdrawals,

the student can find the amount on deposit on any particular quarter of the year.

Illustrative Problems

Find the interest on $180 at 5% for 80 d

$1.80 = interest 60 days, 6%
1/3 .60 = interest 20 days, 6%
$2.40 = interest 80 days, 6%
5/6$2.00 = interest 80 days, 5%

The City Savings Bank pays interest quar
2, April 1, July 1, and October 1 at the
year. On January 2, a pupil had on depo
of $400 including interest to date. He
on March 1, and withdrew $307.50 on May
did he have on deposit on July 1?

Date	Deposit	Withdrawal	Interes
Jan. 2			
March 1	$200.00		
April 1			7.50
May 15		$307.50	
July 1			3.75

Performance Objectives

of a note,
ate, and
time,
alculate the interest:
ions which are aliquot parts of 60

of days using the 1-day method, and
r than 6%.

balance on deposit,
e of interest,
time at which the bank pays interest
given in dates such as January 2,
1, and October 1),
d days of deposits, and
d days of withdrawals,
find the amount on deposit on any
er of the year.

Illustrative Problems

Find the interest on $180 at 5% for 80 days.

$1.80 = interest 60 days, 6%
1/3 .60 = interest 20 days, 6%
$2.40 = interest 80 days, 6%
5/6$2.00 = interest 80 days, 5%

The City Savings Bank pays interest quarterly on January 2, April 1, July 1, and October 1 at the rate of 5% a year. On January 2, a pupil had on deposit a balance of $400 including interest to date. He deposited $200 on March 1, and withdrew $307.50 on May 15. How much did he have on deposit on July 1?

Date	Deposit	Withdrawal	Interest	Balance
Jan. 2				$400.00
March 1	$200.00			600.00
April 1			7.50	607.50
May 15		$307.50		300.00
July 1			3.75	303.75

COMPUTING INTEREST

Level II

Content	Rationale
Finding Rate of Interest	The businessman and the consumer who borrow var amounts for different periods of time may want compare the rates of interest charged by differ agencies. In order to do this, any interest charged for a period should be put on a yearly basis. (If $9 paid for 1/4 of a year, multiply 90 by 4 to fin the annual charge would be.) Once the interest charged is placed on a yearly the businessman or the consumer can make accura comparisons and choose the better offer.

ntent

COMPUTING INTEREST

Level II

Rationale

The businessman and the consumer who borrow various amounts for different periods of time may want to compare the rates of interest charged by different agencies.

In order to do this, any interest charged for any period should be put on a yearly basis. (If $90 is paid for 1/4 of a year, multiply 90 by 4 to find what the annual charge would be.)

Once the interest charged is placed on a yearly basis, the businessman or the consumer can make accurate comparisons and choose the better offer.

Performance Objectives

Given:

- The amount of the loan,
- the period of time money is borrowed, and
- the amount of interest charged,

the pupil will find:

- the interest for 1 year and
- the annual rate of interest

Illustrative Problems

A student paid $14 interest on a loan of $800
days. What annual rate of interest did he pay

$\frac{90}{360}$ = 1/4 of a year

$14 ÷ 1/4 = $56 interest for 1 year

$56 ÷ $800 = 7% annual rate of interest

Performance Objectives

f the loan,

f time money is borrowed, and

f interest charged,

find:

for 1 year and

ate of interest

Illustrative Problems

A student paid \$14 interest on a loan of \$800 for 90 days. What annual rate of interest did he pay?

$\frac{90}{360}$ = 1/4 of a year

\$14 ÷ 1/4 = \$56 interest for 1 year

\$56 ÷ \$800 = 7% annual rate of interest

BANK DISCOUNT

Level I

Content	Rationale
Finding Date of Maturity Finding Term of Discount (30, 60, 90 days)	The seller can require a buyer to sign a note for the amount of a purchase. He may note until the due date, or if he is in ne may cash it or sell it at his bank any tim date of maturity. When a merchant sells a customer's note to and receives cash for it, he is said to *di* *note*. The period of time for which the bank hold (from the day of discount until the date o is called the *term of discount*. The bank the discount charge for this period (term and give the seller the *net proceeds*.
Determining Net Proceeds	When a short-term loan is obtained from a borrower is usually required to pay the ch borrowing at the time the loan is granted. The bank deducts the amount of the discoun from the face of the note. The rate charg bank is called the *discount rate*, and the ducted is called the *bank discount*. This process of paying interest in advance ing *less than the face value* of the note, *discounting a note*. The amount the borrow is called the *Net Proceeds*. Commercial banks often lend money to person checking accounts or to businessmen who nee short periods of time.

BANK DISCOUNT

Level I

Content	Rationale
Maturity Discount (30, 60, 90 days)	The seller can require a buyer to sign a promissory note for the amount of a purchase. He may hold the note until the due date, or if he is in need of funds, may cash it or sell it at his bank any time before the date of maturity. When a merchant sells a customer's note to his bank and receives cash for it, he is said to *discount the note*. The period of time for which the bank holds the note (from the day of discount until the date of maturity) is called the *term of discount*. The bank will deduct the discount charge for this period (term of discount) and give the seller the *net proceeds*.
Proceeds	When a short-term loan is obtained from a bank, the borrower is usually required to pay the charge for borrowing at the time the loan is granted. The bank deducts the amount of the discount charge from the face of the note. The rate charged by the bank is called the *discount rate*, and the interest deducted is called the *bank discount*. This process of paying interest in advance, and receiving *less than the face value* of the note, is called *discounting a note*. The amount the borrower receives is called the *Net Proceeds*. Commercial banks often lend money to persons who have checking accounts or to businessmen who need funds for short periods of time.

Performance Objectives

Given:

. Date of a non-interest bearing note,
. the period of time of the note,
. the bank discount rate,
. the face value of the note, and
. the day of discount,
the student can find:
. date of maturity and
. term of discount (30, 60, 90 days).

Given:

. The face value of a note,
. the bank discount rate, and
. the period of time of the loan,
the student can compute:
. the bank discount and
. the net proceeds.

Illustrative Proble

A merchant discounted at his bank, 90-day promissory note for $420. did he receive as net proceeds fro note?

$4.20 = interest 60 days, 6%
1/2 2.10 = interest 30 days, 6%
$6.30 = interest 90 days, 6%
1/6 1.05 = interest 90 days, 1%
$7.35 = interest 90 days, 7%

$420.00 = face of note
7.35 = bank discount
$412.65 = net proceeds

Performance Objectives

a non-interest bearing note,
od of time of the note,
discount rate,
value of the note, and
of discount,
t can find:
maturity and
discount (30, 60, 90 days).

value of a note,
discount rate, and
od of time of the loan,
t can compute:
discount and
proceeds.

Illustrative Problems

A merchant discounted at his bank, at 7%, his own 90-day promissory note for $420. What sum of money did he receive as net proceeds from discounting this note?

$4.20 = interest 60 days, 6%
1/2 2.10 = interest 30 days, 6%
$6.30 = interest 90 days, 6%
1/6 1.05 = interest 90 days, 1%
$7.35 = interest 90 days, 7%

$420.00 = face of note
7.35 = bank discount
$412.65 = net proceeds

BANK DISCOUNT
Level II

Content	Rationale
Any Number of Days	
Discount Rate Other Than 6%	
Discounting Customer Notes . non-interest bearing	

Performance Objectives

Given:

- . The face value of a note,
- . the bank discount rate, and
- . the period of time of the note,

the student can calculate the:

- . bank discount and
- . net proceeds.

Given: A sample of a non-interest bearing note completely filled out

OR

Given:

- . Face value of a note,
- . date of a note,
- . time period of a note,
- . day of discount, and
- . bank discount rate,

the pupil will find:

- . date of maturity
- . maturity value (same as the face value),
- . term of discount,
- . bank discount, and
- . net proceeds.

Illustrative Problems

On June 16, a merchant discounted at his his own three month promissory note for $ sum of money did he receive as net procee counting this note:

$900 maturity value

June 16 to September 16 = 92 days term of

$900 for 92 days at 8% = $18.40 bank disc

$900.00 - $18.40 = $881.60 net proceeds

Performance Objectives

ue of a note,

count rate, and

f time of the note,

n calculate the:

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of a non-interest bearing note
ly filled out

OR

f a note,

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of a note,

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t rate,

find:

rity

ue (same as the face value),

ount,

t, and

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Illustrative Problems

On June 16, a merchant discounted at his bank at 8%, his own three month promissory note for $900. What sum of money did he receive as net proceeds from discounting this note:

$900 maturity value

June 16 to September 16 = 92 days term of discount

$900 for 92 days at 8% = $18.40 bank discount

$900.00 - $18.40 = $881.60 net proceeds

BANK DISCOUNT

Level II

Content	Rationale
Discounting Customer Notes . interest bearing	When a merchant sells a customer's interest beari note, the bank will give him the maturity value o the note *less the bank discount*. The bank will r ceive the maturity value of the note from the cus To the bank, the bank discount represents the pro on the transaction.

BANK DISCOUNT

Level II

Content	Rationale
mer Notes ing	When a merchant sells a customer's interest bearing note, the bank will give him the maturity value of the note *less the bank discount*. The bank will receive the maturity value of the note from the customer. To the bank, the bank discount represents the profit on the transaction.

Performance Objectives

Given: A sample of an interest bearing note completely filled out

OR

Given:

- . Face value of a note,
- . date of the note,
- . the interest rate,
- . time period of the note,
- . day of discount, and
- . bank discount rate,

the student can figure:

- . the date of maturity,
- . the maturity value,
- . the term of discount,
- . the bank discount, and
- . the net proceeds.

Illustrative Problems

On October 2, a wholesaler discounted at h
customer's two month note dated September
interest at the rate of 6%. The face of t
$1,500. The bank discount rate was 8%. H
he receive as net proceeds from the note?

September 25 + 2 months = November 25 dat

$15.00 interest for 2 months at 6%

$1,500.00 + $15.00 = $1,515.00 maturity v

October 2 - November 25 = 54 days = term

$1,515.00 for 54 days at 8% = $18.18 bank

$1,515.00 - $18.18 = $1,496.82 net procee

Performance Objectives

of an interest bearing note
ly filled out

OR

f a note,
note,
rate,
of the note,
unt, and
t rate,
n figure:
maturity,
value,
discount,
count, and
eeds.

Illustrative Problems

On October 2, a wholesaler discounted at his bank a customer's two month note dated September 25, bearing interest at the rate of 6%. The face of the note was $1,500. The bank discount rate was 8%. How much did he receive as net proceeds from the note?

September 25 + 2 months = November 25 date of maturity

$15.00 interest for 2 months at 6%

$1,500.00 + $15.00 = $1,515.00 maturity value

October 2 - November 25 = 54 days = term of discount

$1,515.00 for 54 days at 8% = $18.18 bank discount

$1,515.00 - $18.18 = $1,496.82 net proceeds

OFFICE MATHEMATICS

FINDING THE COST PER UNIT OF WORK PRODUCED

COMPUTING WAGES

PRESENTING BUSINESS DATA

BUSINESS FINANCIAL REPORTS

FINDING THE COST PER UNIT OF WORK PRODUCED

Level I

Content	Rationale
The Work Station	The businessman is concerned with many diff operating expenses. Many decisions regardi operations are based on an analysis of pres penses and how they affect his profits. Therefore, it is important for him to have records of his operating costs. Some of th Work Station Costs Office Production Costs Mailing and Shipping Costs
Office Production	
Mailing and Shipping	

FINDING THE COST PER UNIT OF WORK PRODUCED

Level I

Content

Rationale

The businessman is concerned with many different operating expenses. Many decisions regarding future operations are based on an analysis of present expenses and how they affect his profits.

Therefore, it is important for him to have accurate records of his operating costs. Some of these are:

Work Station Costs
Office Production Costs
Mailing and Shipping Costs

Performance Objectives	Illustrative Problem
Given: . The breakdown of the various cost items that go into a work station and . the cost of each item, the student can determine the yearly cost of operating the work station.	Find the yearly cost of a work stati at a local utility company who is pa $4,680. Other costs are: floor spac and equipment, $160; typewriter serv and other expenses, $133. $4,680 + 80 + 160 + 40 + 133 = $5,09
Given: . The unit cost per letter and . the number of letters produced (each day, number of days each week, and the number of weeks each year), the student can find the yearly cost of producing the total number of letters.	Determine the cost of supplies for p a day, 5 days a week, for 50 weeks, cost $.127 per letter. 22 x 5 = 110 x 50 = 5,500 letters pr $.127 x 5,500 = $698.50 yearly cost
Given: . The weight of mail in ounces and . the unit cost per ounce or fraction thereof, the student can calculate total mailing cost.	What is the cost of sending a lette ounces, first-class, from Rochester rate is 8¢ per ounce or fraction th 2 1/2 oz. = 3 ounces 3 x $.08 = $.24

Performance Objectives	Illustrative Problems
n of the various cost items that go station and each item, n determine the yearly cost of work station.	Find the yearly cost of a work station for a typist at a local utility company who is paid a salary of $4,680. Other costs are: floor space, $80; furniture and equipment, $160; typewriter service contract, $40; and other expenses, $133 $4,680 + 80 + 160 + 40 + 133 = $5,093 yearly cost
t per letter and f letters produced (each day, number week, and the number of weeks each n find the yearly cost of producing er of letters.	Determine the cost of supplies for producing 22 letters a day, 5 days a week, for 50 weeks, if the supplies cost $.127 per letter. 22 x 5 = 110 x 50 = 5,500 letters produced a year $.127 x 5,500 = $698.50 yearly cost of supplies
f mail in ounces and t per ounce or fraction thereof, n calculate total mailing cost.	What is the cost of sending a letter weighing 2 1/2 ounces, first-class, from Rochester to Boston, if the rate is 8¢ per ounce or fraction thereof? 2 1/2 oz. = 3 ounces 3 x $.08 = $.24

COMPUTING WAGES

Level I

Content	Rationale
Hourly worker . Regular rate . Overtime rate - Time and one-half - Double time	Many employees are paid on an hourly basis a hour week. When an employee works over thi of hours (40-hour week), he is said to be wo *overtime*. The employer increases his hourly every hour *overtime* usually by multiplying t rate by 1 1/2. Therefore, when employees re overtime pay, they will say their employer p time and a half for overtime. Some employees who work on special holidays Sundays are paid double time or 2 times thei rate. It is important for every worker to be able the payroll calculations to make certain he paid the correct amount.
. 8-hour day - time and one-half	In some industries employees are paid on an basis. This means for every hour overtime p the employee usually will receive time and a 1 1/2 times his hourly rate.

COMPUTING WAGES

Level I

Content	Rationale
e-half	Many employees are paid on an hourly basis and a 40-hour week. When an employee works over this amount of hours (40-hour week), he is said to be working *overtime*. The employer increases his hourly wage for every hour *overtime* usually by multiplying the hourly rate by 1 1/2. Therefore, when employees refer to this overtime pay, they will say their employer pays them time and a half for overtime.
	Some employees who work on special holidays and Sundays are paid double time or 2 times their hourly rate.
	It is important for every worker to be able to check the payroll calculations to make certain he is being paid the correct amount.
e-half	In some industries employees are paid on an 8-hour day basis. This means for every hour overtime *per day* the employee usually will receive time and a half or 1 1/2 times his hourly rate.

Performance Objectives

Given:

- The regular hourly rate,
- the regular week load in hours (e.g., 40-hour week), and
- the total hours worked,

the student can find:

- the regular weekly wage (straight time),
- the overtime rate,
- the overtime wage, and
- total gross earnings.

Given:

- The regular hourly rate,
- the regular daily load in hours (e.g., 8-hour day), and
- the total hours worked each day,

the student can determine:

- the regular weekly wage (straight time),
- the overtime rate,
- the overtime wage, and
- total gross earnings.

Illustrative Pr

An employee earns $4.45 an hour
a half for overtime. During a
40 regular hours and 6 overtime
gross earnings.

$4.45 x 40 = $178 regular wage
$4.45 x 1.5 = $6.675 overtime r
$6.675 x 6 = $40.05 overtime wa
$178.00 + $40.05 = $218.05 gros

Performance Objectives

hourly rate,

week load in hours
ur week), and

ours worked,

an find:

weekly wage
me),

e rate,

e wage, and

earnings.

hourly rate,

daily load in hours
r day), and

ours worked each day,

an determine:

weekly wage
ime),

e rate,

e wage, and

earnings.

Illustrative Problems

An employee earns $4.45 an hour, and is paid time and a half for overtime. During a recent week, he worked 40 regular hours and 6 overtime hours. Determine his gross earnings.

$4.45 x 40 = $178 regular wage
$4.45 x 1.5 = $6.675 overtime rate
$6.675 x 6 = $40.05 overtime wage
$178.00 + $40.05 = $218.05 gross earnings

COMPUTING WAGES

Level I

Content	Rationale
Piecework	In some factories a worker is paid every article he produces that is meets the standards set by the com Workers who are paid by the *piece* and acceptable are called *piece wo* Their salary is determined by thei completing many pieces within the
Salary . Converting yearly salary to weekly and monthly salary . Converting weekly and monthly salary to yearly salary	Office salaries are sometimes quot monthly, or yearly basis. An empl compare two salary offers to deter gross income. A correct comparison can be made i placed in the same time period such month, or per year.
Commissions . Figuring amount of commission	Salesmen are sometimes paid a comm a straight salary. The commission a percent of sales or a specific am item sold. The employer may increase the commi difficult-to-sell items as incentiv

COMPUTING WAGES

Level I

Content

ing yearly salary to weekly and monthly

ing weekly and monthly salary to yearly

g amount of commission

Rationale

In some factories a worker is paid on the basis of every article he produces that is acceptable or that meets the standards set by the company.

Workers who are paid by the *piece* or article produced and acceptable are called *piece workers*.

Their salary is determined by their efficiency in completing many pieces within the work week period.

Office salaries are sometimes quoted on a weekly, monthly, or yearly basis. An employee may have to compare two salary offers to determine the better gross income.

A correct comparison can be made if both offers are placed in the same time period such as per week, per month, or per year.

Salesmen are sometimes paid a commission instead of a straight salary. The commission may be based on a percent of sales or a specific amount for each item sold.

The employer may increase the commission on certain difficult-to-sell items as incentive for the salesmen.

Performance Objectives	Illustrative Proble
Given: . The amount paid per piece for every acceptable article produced (piece rate), . the number of articles completed, and . the number of articles rejected or not acceptable, the student can figure the gross earnings for the week.	An employee of the Wilton Mills is each article completed and accepted week, she completed 732 articles. articles were not accepted. What w earnings for the week? 732 - 12 = 720 articles completed a 720 x $ 1/6 = $120 gross earnings
Given: A weekly, monthly, or yearly income the student should be able to: . convert weekly and monthly salaries to yearly income and . convert yearly income to weekly or monthly salaries.	A stenographer earns a yearly salar (1) What would be her weekly salary be her monthly salary? (1) $6,240 ÷ 52 = $120 weekly sala (2) $6,240 ÷ 12 = $520 monthly sal
Given: . The amount of commission paid per item sold (or rate of commission) and . the quantity sold, the student can find the amount of commission.	Last week, Frank sold 76 aluminum s $23 each. How much did he earn if commission was 15% of sales? 76 x $23 = $1,748 sales $1,748 x .15 = $262.20 commission

Performance Objectives	Illustrative Problems
l per piece for every acceptable ed (piece rate), rticles completed, and rticles rejected or not acceptable, igure the gross earnings for the	An employee of the Wilton Mills is paid \$.16 2/3 for each article completed and accepted. During a recent week, she completed 732 articles. A total of 12 articles were not accepted. What were her gross earnings for the week? 732 - 12 = 720 articles completed and accepted 720 x \$ 1/6 = \$120 gross earnings
onthly, or yearly income the uld be able to: and monthly salaries to yearly income to weekly or monthly	A stenographer earns a yearly salary of \$6,240. (1) What would be her weekly salary? (2) What would be her monthly salary? (1) \$6,240 ÷ 52 = \$120 weekly salary (2) \$6,240 ÷ 12 = \$520 monthly salary
ommission paid per item sold (or ion) and ld, ind the amount of commission.	Last week, Frank sold 76 aluminum storm windows at \$23 each. How much did he earn if his rate of commission was 15% of sales? 76 x \$23 = \$1,748 sales \$1,748 x .15 = \$262.20 commission

COMPUTING WAGES

Level I

Content	Rationale
Commissions	Some businesses pay their salesmen both a fi salary plus a commission. The employer may salesmen a percent of the dollar value of sa the salary, or a percent of sales above a sp amount (quota) plus salary. In the case of latter, the employer only begins to pay a co after a specific amount of sales are reache salesman will try to increase his sales by g *over his quota.*
. Salary plus commission	
. Quota commission	

COMPUTING WAGES

Level I

Content

sion

Rationale

Some businesses pay their salesmen both a fixed salary plus a commission. The employer may pay his salesmen a percent of the dollar value of sales plus the salary, or a percent of sales above a specific amount (quota) plus salary. In the case of the latter, the employer only begins to pay a commission after a specific amount of sales are reached. The salesman will try to increase his sales by going *over his quota*.

Performance Objectives	Illustrative Probl
Given: . Base salary, . total sales, and . commission rate, the student can calculate the commission earned and the total gross pay.	
Given: . Base salary, . commission rate paid in excess of quota, . quota, and . amount of sales, the student can determine the commission and the total gross pay.	A salesman is paid a salary of $11 4% commission on all sales in exces of $700. Last week, his sales tot were his gross earnings for the we $845 - 700 = $145 excess $145 x .04 = $5.80 commission $115.00 + 5.80 = $120.80 gross earn

Performance Objectives

lary,

ales, and

ion rate,

nt can calculate the commission earned
otal gross pay.

lary,

ion rate paid in excess of quota,

and

of sales,

nt can determine the commission and the
ss pay.

Illustrative Problems

A salesman is paid a salary of $115 per week and a 4% commission on all sales in excess of a weekly quota of $700. Last week, his sales totaled $845. What were his gross earnings for the week?

$845 - 700 = $145 excess
$145 x .04 = $5.80 commission
$115.00 + 5.80 = $120.80 gross earnings

COMPUTING WAGES

Level I

Content

Take-Home Pay

- Income taxes
- Social Security
- Other deductions (e.g., union dues, health insurance, government bonds)

Rationale

Employees can expect to have income taxes wit
from their salary as well as other deductions
F.I.C.A. tax, union dues, health insurance, e

Most employers use withholding tax tables to
the amount of tax to be deducted. This tax i
on the employee's marital status, the number
dependents he claims, and his gross earnings.

The F.I.C.A. or Social Security tax is calcul
taking a specific percent of the gross pay.
deductions are usually given in fixed amounts
payroll period.

Each employee should be able to read tax tabl
know methods of calculating deductions.

The amount of pay after deductions is called
or *take-home pay*. The employer will supply a
down of the gross pay, all deductions, and ne
which the employee can verify.

COMPUTING WAGES

Level I

Content

(e.g., union dues, health
ment bonds)

Rationale

Employees can expect to have income taxes withheld from their salary as well as other deductions such as F.I.C.A. tax, union dues, health insurance, etc.

Most employers use withholding tax tables to determine the amount of tax to be deducted. This tax is based on the employee's marital status, the number of dependents he claims, and his gross earnings.

The F.I.C.A. or Social Security tax is calculated by taking a specific percent of the gross pay. All other deductions are usually given in fixed amounts for each payroll period.

Each employee should be able to read tax tables and know methods of calculating deductions.

The amount of pay after deductions is called *net pay* or *take-home pay*. The employer will supply a breakdown of the gross pay, all deductions, and net pay which the employee can verify.

Performance Objectives

Given:

- Hourly rate and the basis for payment (8-hour day or 40-hour week),
- overtime formula (time and a half or double time, etc.), and
- the number of hours worked per day or per week,

the student can find the gross earnings.

Given:

- Gross earnings,
- either tax tables or specific amount of taxes deducted,
- percent deducted for F.I.C.A. tax, and
- other deductions such as union dues, health insurance, etc.,

the student can figure the net pay or take-home pay for the period specified.

Illustrative Problems

LaBarr gets time and a half for all work per day. His regular hourly rate is $4.1 he worked the following hours:

Monday	8 hours
Tuesday	9 1/2 hours
Wednesday	6 hours
Thursday	8 1/2 hours
Friday	10 hours

From LaBarr's gross earnings the followin deducted:

FICA	5.20%
Federal income tax	$26.30
State income tax	4.00
Group hospitalization	6.75
Union dues	5.00

What was the amount of LaBarr's net pay?

Day	Reg. Hrs.	Overtime Hrs.
Monday	8	0
Tuesday	8	1 1/2
Wednesday	6	
Thursday	8	1/2
Friday	8	2
	38	4

$4.10 x 38 = $155.80 regular wage
$4.10 x 1.5 = $6.15 overtime rate
$6.15 x 4 = 24.60 overtime wage
$155.80 + 24.60 = $180.40 = gross earning
$180.40 x .052 = $9.38 F.I.C.A.
$9.38 + 26.30 + 4.00 + 6.75 + 5.00 = $51.
$180.40 - 51.43 = $128.97 net earnings

Performance Objectives

d the basis for payment (8-hour day
k),
la (time and a half or double
nd
hours worked per day or per week,
find the gross earnings.

,
les or specific amount of taxes
ed for F.I.C.A. tax, and
ns such as union dues, health
.,
figure the net pay or take-home
od specified.

Illustrative Problems

LaBarr gets time and a half for all work over 8 hours per day. His regular hourly rate is $4.10. Last week he worked the following hours:

Monday	8 hours
Tuesday	9 1/2 hours
Wednesday	6 hours
Thursday	8 1/2 hours
Friday	10 hours

From LaBarr's gross earnings the following items were deducted:

FICA	5.20%
Federal income tax	$26.30
State income tax	4.00
Group hospitalization	6.75
Union dues	5.00

What was the amount of LaBarr's net pay?

Day	Reg. Hrs.	Overtime Hrs.
Monday	8	0
Tuesday	8	1 1/2
Wednesday	6	
Thursday	8	1/2
Friday	8	2
	38	4

$4.10 x 38 = $155.80 regular wage
$4.10 x 1.5 = $6.15 overtime rate
$6.15 x 4 = 24.60 overtime wage
$155.80 + 24.60 = $180.40 = gross earnings
$180.40 x .052 = $9.38 F.I.C.A.
$9.38 + 26.30 + 4.00 + 6.75 + 5.00 = $51.43 deductions
$180.40 - 51.43 = $128.97 net earnings

COMPUTING WAGES

Level II

Content	Rationale
Differentiated Piecework	In some factories employees are pai for the various categories of piec per piece in each category depends skill and time it takes to complet Therefore, an employee knows from t of the pieces he is working on, th paid for each of the accepted and
Piecework Quota	Factory workers are often encourage production by an incentive plan whi rate per piece, if the worker goes amount or *quota*.
Changing a Monthly Salary to a Weekly Salary, or Vice Versa	There are times when an employee ma opportunity to choose between two may be given on a weekly basis and given on a monthly basis. The only comparison can be made is if each s on the same period basis, either we An employee should be able to conve categories in order to make compari
Graduated Commission	An employer can encourage his sales volume of sales by paying them on a sion basis. This means as the sale amounts in sales, during a specifie he is paid also increases. For exa 5% for the first $5,000, 6% on the 7% on all sales over $7,000.

COMPUTING WAGES

Level II

Content	Rationale
ecework	In some factories employees are paid a different rate for the various categories of pieces. The amount paid per piece in each category depends on the amount of skill and time it takes to complete these pieces. Therefore, an employee knows from the classification of the pieces he is working on, the amount he will be paid for each of the accepted and completed pieces. Factory workers are often encouraged to increase their production by an incentive plan which pays an increased rate per piece, if the worker goes over a specified amount or *quota*.
ly Salary to a Weekly Salary, or Vice	There are times when an employee may be given the opportunity to choose between two offers. One offer may be given on a weekly basis and the other may be given on a monthly basis. The only way a correct comparison can be made is if each salary is placed on the same period basis, either weekly or monthly. An employee should be able to convert his salary to all categories in order to make comparisons.
sion	An employer can encourage his salesmen to increase their volume of sales by paying them on a graduated commission basis. This means as the salesman exceeds certain amounts in sales, during a specified period, the rate he is paid also increases. For example, he may be paid 5% for the first $5,000, 6% on the next $2,000, and 7% on all sales over $7,000.

Performance Objectives

Given:

- The various categories and the rates per category and
- the number of pieces completed in each category,

the student can compute the total gross earnings.

Given:

- The regular rate per piece,
- the special rate per piece above the specified *quota*, and
- the total amount of pieces completed and accepted,

the student can calculate the gross earnings.

Given: A weekly or monthly salary, the student can convert to a yearly, monthly, weekly, or daily salary, as needed.

Given:

- The rate paid in each sales volume category (5% for the first $5,000, 6% on the next $2,000, etc.) for a particular period and
- the amount of sales for a specified period,

the student should be able to calculate the commission earned for the specified period.

Illustrative

A machinist, who completes va
according to the following sch

Article A = $.50 per arti
Article B = .67 per art
Article C = .45 per arti

During a recent week, he compl

Article A = 83
Article B = 52
Article C = 61

Determine his gross earnings f

$.50 x 83 = $ 41.50
.67 x 52 = 34.84
.45 x 61 = 27.45
$103.79 gross

Ames is paid 5% commission on
monthly sales and 7% on all sa
His sales for October were $17
gross earnings for the month?

$14,000 x .05 = $700 comm
$17,500 - $14,000 = $3,50
$ 3,500 x .07 = $245 comm
$700 + 245 = $945 gross e

Performance Objectives

tegories and the rates per category

pieces completed in each category,
compute the total gross earnings.

te per piece,

te per piece above the specified

nt of pieces completed and accepted,
calculate the gross earnings.

r monthly salary, the student can
a yearly, monthly, weekly, or
ry, as needed.

in each sales volume category (5% for
00, 6% on the next $2,000, etc.) for
eriod and

sales for a specified period,

ld be able to calculate the commis-
the specified period.

Illustrative Problems

A machinist, who completes various articles is paid according to the following schedule:

Article A = $.50 per article
Article B = .67 per article
Article C = .45 per article

During a recent week, he completed the following:

Article A = 83
Article B = 52
Article C = 61

Determine his gross earnings for the week.

$.50 x 83 = $ 41.50
.67 x 52 = 34.84
.45 x 61 = 27.45
$103.79 gross earnings

Ames is paid 5% commission on the first $14,000 of monthly sales and 7% on all sales in excess of $14,000. His sales for October were $17,500. What were his gross earnings for the month?

$14,000 x .05 = $700 commission
$17,500 - $14,000 = $3,500 excess
$ 3,500 x .07 = $245 commission
$700 + 245 = $945 gross earnings

COMPUTING WAGES

Level II

Content	Rationale
Preparing a Business Payroll	In Level I, we used some different me earned wages. That was good preparat level of computations, preparing payr
. Determining number of hours worked from time cards	In some companies, the number of hour works is recorded on a time card. Th into a machine with a time clock, and an employee arrives and leaves is rec morning, afternoon, and evening. Usually, credit is only given in quar employee would not receive credit for a quarter hour. An employee can read his own time car his hours for the week. He can then the amount of his paycheck.

COMPUTING WAGES

Level II

Content	Rationale
ss Payroll	In Level I, we used some different methods of figuring earned wages. That was good preparation for this next level of computations, preparing payrolls.
mber of hours worked from time	In some companies, the number of hours an employee works is recorded on a time card. The card is placed into a machine with a time clock, and the time at which an employee arrives and leaves is recorded in the morning, afternoon, and evening.
	Usually, credit is only given in quarter hours. An employee would not receive credit for periods less than a quarter hour.
	An employee can read his own time card and calculate his hours for the week. He can then compare this with the amount of his paycheck.

Performance Objectives

Given:

- A picture of a sample time card completed for the week

OR

- the times checked in and out in each category (morning, afternoon, and evening) for the week,

the student should be able to calculate the total hours worked for the week.

Illustrative Pro

The Thomas Company pays its empl
day basis with time and one-half
time for Henry Shaw for Tuesday

Pay

Name Henry Shaw

Social Security Number 108-

Day	IN	OUT	IN	OU
Tues.	7:58	12:00	12:29	4:2

Allow 3 minutes, early or late,
without loss of time. Determine
regular and overtime hours worke

8 regular hours
2 overtime hours
10

formance Objectives

mple time card completed for the

OR

in and out in each category
on, and evening) for the week,

be able to calculate the total
e week.

Illustrative Problems

The Thomas Company pays its employees on an 8-hour-per-day basis with time and one-half for overtime. The time for Henry Shaw for Tuesday is shown below.

Pay Period Ending
1/8/

Name Henry Shaw

Social Security Number 108-01-9072

Day	IN	OUT	IN	OUT	IN	OUT	TOTAL
Tues.	7:58	12:00	12:29	4:27	5:01	7:01	

Allow 3 minutes, early or late, for checking in or out without loss of time. Determine the total number of regular and overtime hours worked on Tuesday.

8 regular hours
2 overtime hours
10

COMPUTING WAGES

Level II

Content

Preparing a Business Payroll

. Preparing a payroll register

Rationale

The payroll register covers the pay perio
all the information needed to arrive at t
pay" figure. The categories may include:

number of hours (regular and overtime)
hourly rate
number of exemptions
gross earnings
deductions such as - F.I.C.A.
withholding taxes
insurance
hospitalization
others

It shows the complete picture for all emp
paid during a particular pay period.

COMPUTING WAGES

Level II

ontent

oll

egister

Rationale

The payroll register covers the pay period and contains all the information needed to arrive at the "take-home pay" figure. The categories may include:

number of hours (regular and overtime)
hourly rate
number of exemptions
gross earnings
deductions such as - F.I.C.A.
    withholding taxes
    insurance
    hospitalization
    others

It shows the complete picture for all employees being paid during a particular pay period.

Performance Objectives

Given: A payroll register partially filled out for several employees,

the student can analyze its contents and complete those calculations left blank for various employees covering:

. net pay,

. taxes withheld,

. gross earnings,

. others.

Illustrative Problems

By referring to the Payroll Register below, each of the following questions:

1. What was Case's net pay for the week? ($128.55)
2. What amount of money was withheld for FI Duell's total earnings? ($7.80)
3. What were Murray's total earnings? ($133.30)

PAYROLL REGISTER

Week Ended September 24

Name	No. of Exemptions	Total Hours		Hour Rate	Total Earnings	FICA	Deductions		Total	Net Pay
		Regular	Overtime				Fed. Tax	State Tax		
Case, L.	5	40	2	$3.60	$154.80	$8.05	$15.50	$2.70	$26.25	$
Duell, H.	4	40		3.75	150.00		13.50	2.20	23.50	126.50
Murray, F.	0	40	2	3.10		6.93	23.70	4.20	34.83	128.55

formance Objectives

ister partially filled out for
ees,

lyze its contents and complete
left blank for various employees

Illustrative Problems

By referring to the Payroll Register below, answer each of the following questions:

1. What was Case's net pay for the week?
   ($128.55)
2. What amount of money was withheld for FICA from Duell's total earnings?
   ($7.80)
3. What were Murray's total earnings?
   ($133.30)

PAYROLL REGISTER

eptember 24

No. of Exemp- tions	Total Hours		Hour Rate	Total Earn- ings	FICA	Deductions		Total	Net Pay
	Regu- lar	Over- time				Fed. Tax	State Tax		
3	40	2	$3.60	$154.80	$8.05	$15.50	$2.70	$26.25	$
4	40		3.75	150.00		13.50	2.20	23.50	126.50
0	40	2	3.10		6.93	23.70	4.20	34.83	128.55

COMPUTING WAGES

Level II

Content	Rationale
Preparing a Business Payroll . Preparing individual earnings record	An employee's earnings record may contain all roll data for one employee over a period of 13 or 1/4 of the year. It usually has an additio column for accumulated earnings. The informat from the payroll register is posted to each em earnings record. The law requires that an emp earnings record be kept on file for government for at least four years.
. Employer's payroll taxes	The employer is required to pay the same F.I.C. Social Security *tax rate* as the employee for e roll period. Therefore, if the employee is ta 5.2% of his gross earnings, the employer must p 5.2% of the total gross earnings of all his em for the payroll period. One who is self-employed or in business for hi also taxed, but on a different basis than the employer.

COMPUTING WAGES

Level II

Content	Rationale
yroll earnings record	An employee's earnings record may contain all the payroll data for one employee over a period of 13 weeks or 1/4 of the year. It usually has an additional column for accumulated earnings. The information from the payroll register is posted to each employee's earnings record. The law requires that an employee's earnings record be kept on file for government audit for at least four years.
taxes	The employer is required to pay the same F.I.C.A. or Social Security *tax rate* as the employee for each payroll period. Therefore, if the employee is taxed 5.2% of his gross earnings, the employer must pay 5.2% of the total gross earnings of all his employees for the payroll period. One who is self-employed or in business for himself is also taxed, but on a different basis than the regular employer.

Performance Objectives

Given:

- An incomplete earnings record for an individual employee and
- payroll data from a payroll register,

the student can post the information from the payroll register to the earnings record, total all columns, and bring the "accumulated earnings" up to date.

Given:

- The F.I.C.A. tax rate on employees total gross earnings and
- the total gross earnings or taxable wages in a payroll period,

the student can find the amount of F.I.C.A. tax levied on the employer for that payroll period.

Illustrative Problems

COMPUTING WAGES

Level II

Content	Rationale
Preparing a Business Payroll . Payroll change sheet	Some employers pay their employees in currency. the payroll register is completed and the take- pay is calculated, the payroll clerk will recor *change sheet* the number of bills and coins in e denomination needed to pay each employee. The each column represents the money he will order the bank to pay each employee. It is customary for the payroll clerk to reques and coins in the largest denominations. This s fies the preparation of the cash payroll by red the number of bills and coins to be handled.
. Payroll change memorandum	The employer will issue one check for the total home pay, and the bank will supply the cash bas payroll *change memorandum* which is made up from totals on the *change sheet*.

COMPUTING WAGES

Level II

Content	Rationale
ayroll eet	Some employers pay their employees in currency. After the payroll register is completed and the take-home pay is calculated, the payroll clerk will record on a *change sheet* the number of bills and coins in each denomination needed to pay each employee. The total of each column represents the money he will order from the bank to pay each employee. It is customary for the payroll clerk to request bills and coins in the largest denominations. This simplifies the preparation of the cash payroll by reducing the number of bills and coins to be handled.
orandum	The employer will issue one check for the total take-home pay, and the bank will supply the cash based on a payroll *change memorandum* which is made up from the totals on the *change sheet*.

Performance Objectives

Illustrative Problems

Given:

- A completed payroll register indicating the take-home pay for each employee and
- a change sheet form with each columnar heading indicating bill and coin denominations,

the student will:

- record the number of bills and coins to be ordered for each employee and
- total each column.

Using the completed change sheet (from the previous step), the student will:

- List the totals from the change sheet on to the change memorandum,
- covert each total of bills and coins to dollars and cents, and
- total the amount column which should equal the total take-home pay.

Complete the Change Sheet for Week Ended August 14

Name	Net Wages	$20	$10	$5	$1	50¢	25¢	10¢	5¢	1¢
Daley, P.		7	1	1	3			2		
Glenn, J.		6	1		4	1	1	1		4
Knox, A.		6		1	4	1	1	1	1	2
Madden, B.		8	1	1	2			1	1	1
Total										

PRESENTING BUSINESS DATA

Level I

Content	Rationale
Using Charts and Graphs (This should be taught throughout the course.)	Charts and graphs are widely used by business government to present information to the publ a form that is easy to understand. In one pi one can visualize business operations, trends parisons, etc. Once material is presented in this picture fo should be able to analyze its contents and fo various conclusions.

PRESENTING BUSINESS DATA

Level I

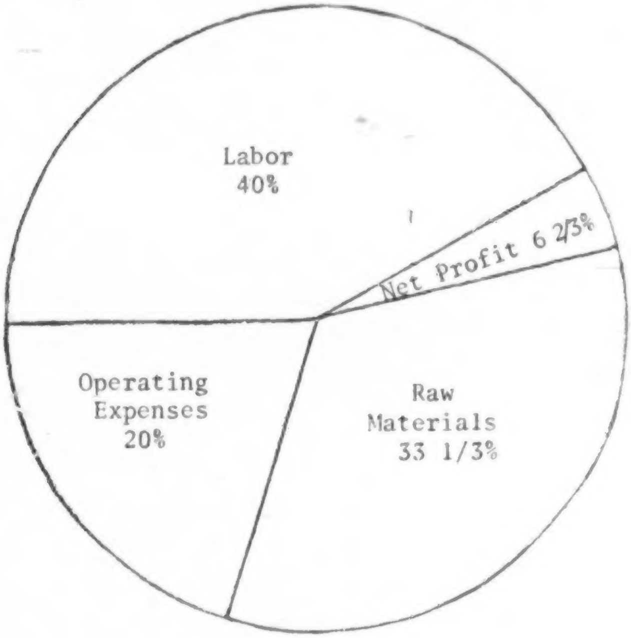
Content	Rationale
aphs aught throughout the course.)	Charts and graphs are widely used by business and government to present information to the public in a form that is easy to understand. In one picture one can visualize business operations, trends, comparisons, etc. Once material is presented in this picture form, one should be able to analyze its contents and form various conclusions.

Performance Objectives

Given any of the following:

- Vertical bar chart,
- horizontal bar chart,
- line chart (broken or straight),
- rectangle chart, or
- pie chart,

the student can analyze the information and make mathematical calculations based on material pictured in the chart.



Illustrative Problems

Base your answers to questions 1-4 on the infor
below.

The annual sales of the Good Manufacturing Comp
amounted to $240,000 in 1972. The pie chart at
shows how each sales dollar was used.

Using that pie chart, derive answers to the following:

1. What amount of money was spent for labor? ($240,000 x .40)
2. What was the amount of money earned as net
($240,000 x 1/5)
3. If the gross profit may be found by subtrac
materials and labor from sales, what is the
amount of the gross profit? ($64,000)
4. Next year's sales are expected to increase
8%. What should the expected sales amount
next year? ($240,000 + $19,200)

nce Objectives

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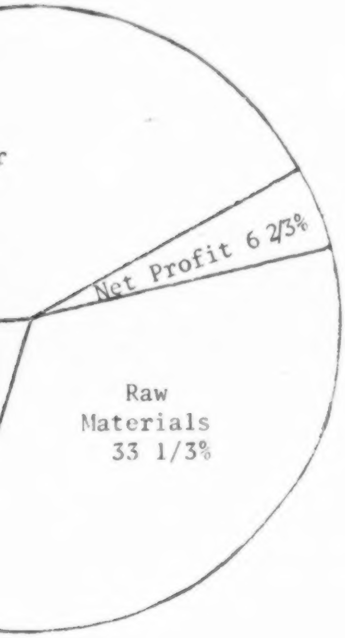
straight),

the information and make
ns based on material pic-



Illustrative Problems

Base your answers to questions 1-4 on the information below.

The annual sales of the Good Manufacturing Company amounted to $240,000 in 1972. The pie chart at the left shows how each sales dollar was used.

Using that pie chart, derive answers to the following:

1. What amount of money was spent for labor? ($240,000 x .40)
2. What was the amount of money earned as net profit? ($240,000 x 1/5)
3. If the gross profit may be found by subtracting raw materials and labor from sales, what is the amount of the gross profit? ($64,000)
4. Next year's sales are expected to increase by 8%. What should the expected sales amount to next year? ($240,000 + $19,200)

PRESENTING BUSINESS DATA

Level II

Content	Rationale
Preparing Charts and Graphs . Line graphs . Bar graphs . Circle graphs or pie charts	In Level I, the student learned to read chart graphs. Now he or she can move to constructi charts from raw data.

PRESENTING BUSINESS DATA

Level II

Content	Rationale
Graphs	In Level I, the student learned to read charts and graphs. Now he or she can move to constructing such charts from raw data.
pie charts	

Performance Objectives

Given:

- Raw data,
- type of chart required such as bar, line, circle, etc., and
- (optional) the amount each line or division should represent,

the student can:

- set up titles and headings that clearly indicate the data to be presented and
- plot the data and complete graph in proper form.

Illustrative Problems

BUSINESS FINANCIAL REPORTS

Level II

Content	Rationale
alculations in the Income Statement	The income statement shows the financial progres business operations of a business over a period There are five major sections: 1. Income from Sales 2. Cost of Goods Sold 3. Gross Profit 4. Operating Expenses 5. Net Income (Net Profit) The income statement, therefore, shows how the n income was obtained. Banks will examine a company's income statement before issuing loans, and potential investors wil review an income statement before buying stock in company.
istribution of Partnership Profits	When a partnership is formed, an agreement is sig which includes specific instructions regarding ho profits are to be divided.
. Equally	One of the methods is to divide profits equally.
. Set ratio	In some partnerships profits are shared on a fixe ratio such as 3 to 2 or 60% to 40%.

BUSINESS FINANCIAL REPORTS

Level II

ent

Rationale

tatement

The income statement shows the financial progress or business operations of a business over a period of time. There are five major sections:

1. Income from Sales
2. Cost of Goods Sold
3. Gross Profit
4. Operating Expenses
5. Net Income (Net Profit)

The income statement, therefore, shows how the net income was obtained.

Banks will examine a company's income statement before issuing loans, and potential investors will review an income statement before buying stock in a company.

Profits

When a partnership is formed, an agreement is signed which includes specific instructions regarding how profits are to be divided.

One of the methods is to divide profits equally.

In some partnerships profits are shared on a fixed ratio such as 3 to 2 or 60% to 40%.

Performance Objectives

Given:

. Sales for the month,

. operating expenses, and

. cost of goods sold,

the student can find:

. gross profit and

. net income (net profit).

Given:

. The net profit for one year and

. the number of partners,

the student can compute the profits for each partner's share.

Given:

. The net profit for one year and

. the ratio basis for distribution,

the student should be able to compute each partner's share of the profits.

Illustrative Problems

A retailer had net sales of $22,500 for the mon August. Operating expenses for the month total $5,750 and the cost of goods sold amounted to $14,500. Find his (1) gross profit and his (2) profit for the month.

$22,500 = sales
-14,500 = cost of goods sold
$ 8,000 = gross profit on sales
- 5,750 = operating expenses
$ 2,250 = net profit

A, B, and C were partners in a wholesale busine Last year, the total sales amounted to $285,64 cost of goods sold was $247,847. Operating exp were $20,450. The net profit was divided equal among the three partners. How much did each pa receive?

$285,640 - 247,847 = $37,793 gross profit
$ 37,793 - 20,450 = $17,343 net profit
$ 17,343 ÷ 3 = $5,781 each partner's share

Performance Objectives

month,
nses, and
sold,
find:
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compute the profits for each

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Illustrative Problems

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$ 37,793 - 20,450 = $17,343 net profit
$ 17,343 ÷ 3 = $5,781 each partner's share

BUSINESS FINANCIAL REPORTS

Level II

Content	Rationale
Distribution of Partnership Profits . According to investment	When the partnership agreement states that prof to be shared according to investment, each part investment is computed as a fractional part of capital of the partnership. Each partner recei fractional part of the profits. For example: If partners A, B, and C invested $2,000, $3,000 $1,000, respectively, A would receive 2000/6000 or 1/3, B would receive 3000/6000 or 1/2, and C would receive 1000/6000 or 1/6, of the profi be distributed.
. Interest on investment	Partnership agreements sometimes allow each part to receive a specified percent of interest on hi vestment from the annual profits. The remainder then be divided equally.

BUSINESS FINANCIAL REPORTS

Level II

Content

Rationale

rship Profits

tment

When the partnership agreement states that profits are to be shared according to investment, each partner's investment is computed as a fractional part of the total capital of the partnership. Each partner receives this fractional part of the profits.

For example:

If partners A, B, and C invested $2,000, $3,000, and $1,000, respectively,

A would receive 2000/6000 or 1/3,
B would receive 3000/6000 or 1/2, and
C would receive 1000/6000 or 1/6, of the profits to be distributed.

ment

Partnership agreements sometimes allow each partner to receive a specified percent of interest on his investment from the annual profits. The remainder may then be divided equally.

Performance Objectives

Given:

- The investment of each partner and
- the net profit to be distributed for one year,

the student can find:

- the total investment of all partners,
- fractional part of each partner's investment, and
- each partner's share of the profits.

Given:

- Each partner's investment,
- the percent of interest on each partner's investment, and
- the annual profits to be distributed,

the student can:

- find interest on investment for each partner,
- find the remainder after interest on investments are subtracted from the annual profits,
- divide the remainder equally and add each partner's share to his interest on his investment (found in step a), and
- find each partner's total share of the annual net income by adding the interest on his investment and the equal share of the remainder.

Illustrative Problems

Three partners, A, B, and C, invested $4
and $11,000, respectively, in a retail bu
net profit for a recent year was $15,000
are to be shared in proportion to each ma
ment, what amount of money did each recei

$4,000 + 5,000 + 11,000 = $20,000 total i

A $\frac{\$4,000}{20,000} = 1/5 \quad \times \$15,000 = \$3,000$

B $\frac{\$5,000}{20,000} = 1/4 \quad \times \$15,000 = \$3,750$

C $\frac{\$11,000}{20,000} = 11/20 \times \$15,000 = \underline{\$8,250}$

$\$15,000$

X and Y formed a partnership with investm
and $6,000, respectively. The partnershi
vided that the net profit would be divide

Each partner was to receive 6% interest
investment, with the remaining profit to
equally. Last year the firm's net profit
What amount did each partner receive as h
of this net profit?

X $9,000 x .06 = $540 interest on inves

Y $6,000 x .06 = $360 interest on inves

$540 + 360 = $900 total interest

$21,000 - 900 = $20,100 balance to be di

$20,100 ÷ 2 = $10,050 each partner's sha

X $10,050 + 540 = $10,590

Y $10,050 + 360 = $\underline{10,410}$

$21,000 = profit

mance Objectives

ch partner and
distributed for one year,

of all partners,

ach partner's investment, and

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tment,

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o be distributed,

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t on his investment (found in

total share of the annual net
interest on his investment and
he remainder.

Illustrative Problems

Three partners, A, B, and C, invested $4,000, $5,000, and $11,000, respectively, in a retail business. The net profit for a recent year was $15,000. If profits are to be shared in proportion to each man's investment, what amount of money did each receive?

$4,000 + 5,000 + 11,000 = $20,000 total investment

A $\frac{\$\ 4,000}{20,000} = 1/5 \quad \text{x } \$15,000 = \$3,000$

B $\frac{\$\ 5,000}{20,000} = 1/4 \quad \text{x } \$15,000 = \$3,750$

C $\frac{\$11,000}{20,000} = 11/20 \text{ x } \$15,000 = \underline{\$8,250}$

$15,000

X and Y formed a partnership with investments of $9,000 and $6,000, respectively. The partnership agreement provided that the net profit would be divided as follows:

Each partner was to receive 6% interest annually on his investment, with the remaining profit to be shared equally. Last year the firm's net profit was $21,000. What amount did each partner receive as his total share of this net profit?

X $9,000 x .06 = $540 interest on investment

Y $6,000 x .06 = $360 interest on investment

$540 + 360 = $900 total interest

$21,000 - 900 = $20,100 balance to be distributed

$20,100 ÷ 2 = $10,050 each partner's share

X $10,050 + 540 = $10,590

Y $10,050 + 360 = $\underline{10,410}$

$21,000 = profit

BUSINESS FINANCIAL REPORTS

Level II

Content	Rationale
Bankruptcy . Determining the rate of settlement	When a debtor is unable to pay his debts, he to be *insolvent*. If this condition continues long period of time, the debtor may come fort tarily, or the creditors could request the co have him declared a *bankrupt*. The courts would then have all the debtor's p placed in the hands of a receiver or trustee converted to cash. After all costs for bankr proceedings are paid, the remainder is distri among all creditors. The percent or *rate of settlement* to be paid creditor is determined by dividing the availa cash by the total claims of all creditors.
Determining amount to be paid to a creditor	Once the rate of settlement is determined, it applied to each claim. For example, if the ra settlement was 40% or $.40 on a dollar, and if creditor was owed $300, the debtor would pay $300 or $120.

BUSINESS FINANCIAL REPORTS

Level II

Content	Rationale
te of settlement	When a debtor is unable to pay his debts, he is said to be *insolvent*. If this condition continues over a long period of time, the debtor may come forth voluntarily, or the creditors could request the court to have him declared a *bankrupt*. The courts would then have all the debtor's property placed in the hands of a receiver or trustee to be converted to cash. After all costs for bankruptcy proceedings are paid, the remainder is distributed among all creditors. The percent or *rate of settlement* to be paid each creditor is determined by dividing the available cash by the total claims of all creditors.
to be paid to a creditor	Once the rate of settlement is determined, it is applied to each claim. For example, if the rate of settlement was 40% or $.40 on a dollar, and if a creditor was owed $300, the debtor would pay 40% of $300 or $120.

Performance Objectives	Illustrative Problems
Given: . Total amount of liabilities or claims and . net cash available for distribution, the student can figure the rate of settlement.	
Given: Using the rate of settlement obtained in the previous step. The student should be able to apply this to a creditor's claim to find the amount to be paid a creditor.	Fox went into bankruptcy owing a total of $31, In settling his case, the net cash available t creditors was $12,355.20. (1) How many cents dollar would each creditor receive on his clai (2) How much can a creditor with a claim of $4 expect to receive? (1) $12,355.20 ÷ $31,680.00 = 39 cents on a d (2) $455 x .39 = $177.45 amount creditor will

Objectives	Illustrative Problems
s or claims and tribution, ate of settlement.	
lement obtained in the udent should be able editor's claim to paid a creditor.	Fox went into bankruptcy owing a total of $31,680. In settling his case, the net cash available to his creditors was $12,355.20. (1) How many cents on the dollar would each creditor receive on his claim? (2) How much can a creditor with a claim of $455 expect to receive? (1) $12,355.20 ÷ $31,680.00 = 39 cents on a dollar (2) $455 x .39 = $177.45 amount creditor will receive

PERSONAL MONEY MANAGEMENT

PURCHASING GOODS

LEASING PERSONAL PROPERTY

RENTING OR OWNING REAL PROPERTY

SOCIAL SECURITY CONTRIBUTIONS

LIFE INSURANCE

FIRE INSURANCE

STOCKS, BONDS, AND MUTUAL FUNDS

FEDERAL AND STATE PERSONAL INCOME TAXES

BUDGETING

PURCHASING GOODS

Level I

Content	Rationale
Comparing Unit Costs	As a consumer, one of the most confusin involved in purchasing goods is to try t unit value of similar items of merchandi there is little or no uniformity in the of goods, the consumer is left with the determining whether or not he is gettin value for his money. His problem then is to convert the pric amount per ounce, or per pound, or per When this is done, then he will know whi the best value.
Sales and Excise Taxes	To realistically calculate the cost of m purchased today, the buyer must take int tion the state and local sales taxes whi levied in most areas. These range up to increase the cost of the item considerab Excise taxes are levied by the Federal are generally included in retail price When they are identified as a separate i apparent that these taxes, too, add cons the item's total cost. A consumer should be aware of these tax case of sales taxes, records should be k purchase of major items on which they ha included. Sales taxes are allowable ded income tax purposes.

PURCHASING GOODS

Level I

Content

Rationale

As a consumer, one of the most confusing problems involved in purchasing goods is to try to compare the unit value of similar items of merchandise. Since there is little or no uniformity in the packaging of goods, the consumer is left with the problem of determining whether or not he is getting the best value for his money.

His problem then is to convert the price stated amount per ounce, or per pound, or per dozen, etc. When this is done, then he will know which offer is the best value.

To realistically calculate the cost of many items purchased today, the buyer must take into consideration the state and local sales taxes which have been levied in most areas. These range up to 7% and increase the cost of the item considerably.

Excise taxes are levied by the Federal Government and are generally included in retail price of goods. When they are identified as a separate item, it becomes apparent that these taxes, too, add considerably to the item's total cost.

A consumer should be aware of these taxes; and in the case of sales taxes, records should be kept of the purchase of major items on which they have been included. Sales taxes are allowable deductions for income tax purposes.

Performance Objectives	Illustrative Problems
Given: The prices of 2 or more similar items, priced in different units or quantities, the pupil can determine: . the unit cost of each item and . which item offers the better or best value.	A 2 oz. jar of instant coffee costs $.63. An of the same coffee costs $2.15. How much mo saved by buying an 8 oz. jar instead of buyi 2 oz. jars separately? $.63 x 4 = $2.52 cost of four 2 oz. jars $2.52 - 2.15 = $.37 saved
Given: . The original selling prices of several items, ranging in price from 10¢ to several thousands of dollars and . a schedule of sales tax charges, the student can find: . the sales tax charged on each item and . the total cost of each item.	An automobile tire retails for $21 plus a fe excise tax of $2.20 and a 7% sales tax. Wha total cost of this tire to the purchaser? $21 x .07 = $1.47 sales tax $21.00 + 2.20 + 1.47 = $24.67 total cost

Performance Objectives	Illustrative Problems
of 2 or more similar items, different units or quantities, termine: of each item and fers the better or best value.	A 2 oz. jar of instant coffee costs $.63. An 8 oz. jar of the same coffee costs $2.15. How much money is saved by buying an 8 oz. jar instead of buying four 2 oz. jars separately? $.63 x 4 = $2.52 cost of four 2 oz. jars $2.52 - 2.15 = $.37 saved
elling prices of several items, ce from 10¢ to several thousands d sales tax charges, find: charged on each item and t of each item.	An automobile tire retails for $21 plus a federal excise tax of $2.20 and a 7% sales tax. What is the total cost of this tire to the purchaser? $21 x .07 = $1.47 sales tax $21.00 + 2.20 + 1.47 = $24.67 total cost

LEASING PERSONAL PROPERTY

Level I

Content	Rationale
Consumer's Cost	Some consumers prefer to lease persona (automobiles, boats, tuxedos, househol appliances, typewriters, etc.) rather them. This relieves the consumer of m problems of ownership and allows him t selecting a new model whenever he need If he owned the item, it would be his sibility to maintain it in good operat The cost of leasing is usually on an h weekly, or monthly basis. In the case mobile, there may be additional charge and gasoline, as well as insurance. A deposit may also be required.
Comparison of Leasing and Owning	The advantage of leasing versus owning of personal property should be investi by the user of such property. For the of purchase may be only the beginning. maintenance and depreciation are consi the time and care which may be require ignored. On the other hand leasing ma convenient, since the item may not be needed. Leased property may be in better condi property. When the item is not operat it may be returned or repaired at no c replacement is generally available on In any case, a careful comparison of a and disadvantages should be made befor decision is made.

LEASING PERSONAL PROPERTY

Level I

Content

Rationale

Some consumers prefer to lease personal property (automobiles, boats, tuxedos, household and garden appliances, typewriters, etc.) rather than purchase them. This relieves the consumer of many of the problems of ownership and allows him the advantage of selecting a new model whenever he needs the article. If he owned the item, it would be his financial responsibility to maintain it in good operating condition.

The cost of leasing is usually on an hourly, daily, weekly, or monthly basis. In the case of an automobile, there may be additional charges for mileage and gasoline, as well as insurance. A refundable deposit may also be required.

nd Owning

The advantage of leasing versus owning certain items of personal property should be investigated thoroughly by the user of such property. For the owner, the cost of purchase may be only the beginning. Costs of maintenance and depreciation are considerable; and the time and care which may be required should not be ignored. On the other hand leasing may not always be convenient, since the item may not be on hand when needed.

Leased property may be in better condition than owned property. When the item is not operating properly, it may be returned or repaired at no cost. A replacement is generally available on short notice. In any case, a careful comparison of all advantages and disadvantages should be made before any final decision is made.

Performance Objectives

Given:

- The time required for use of leased property,
- the cost per unit of time used, and
- any other expenses involved,

the learner can arrive at the total expense in leasing the property.

Given:

- The items of expense in leasing personal property and
- the items of expense in owning personal property,

the student can figure:

- the total cost of leasing the property,
- the total cost of owning the property, and
- which is financially more advisable.

Illustrative

A power lawn mower can be ren
A man rents a mower for 3 hou
different days during the law
addition to the rental fee, h
additional 10 gallons of gaso
of $.389 per gallon including
total expense of operating th

17 x 3 = 51 hours

$1.50 x 51 = $76.50 rental fe

$.389 x 10 = $3.89 gasoline

$76.50 + 3.89 = $80.39 total

It is possible to lease an au
a monthly rental of $202. Th
only the use of the automobil
the insurance and maintenance
mobile can be purchased for $
the purchase price, other exp

License plates	$ 22
Insurance	456
Maintenance	270
Depreciation	18%
Interest on investment	5%

Determine the amount of money
rather than leasing the autom

$202 x 12 = $2,424 rental for
$2,800 x .18 = $504 depreciat
$2,800 x .05 = $140 interest
$22.50 + 456.00 + 270.00 + 50

$2,424.00 - 1,392.50 = $1,031

Performance Objectives

required for use of leased property,

per unit of time used, and

expenses involved,

can arrive at the total expense in

property.

of expense in leasing personal

and

of expense in owning personal property,

can figure:

cost of leasing the property,

cost of owning the property, and

financially more advisable.

Illustrative Problems

A power lawn mower can be rented for $1.50 per hour. A man rents a mower for 3 hours per day on 17 different days during the lawn-cutting season. In addition to the rental fee, he also has to purchase an additional 10 gallons of gasoline at an average cost of $.389 per gallon including taxes. What is the total expense of operating the power lawn mower?

17 x 3 = 51 hours

$1.50 x 51 = $76.50 rental fee

$.389 x 10 = $3.89 gasoline

$76.50 + 3.89 = $80.39 total expense

It is possible to lease an automobile for one year at a monthly rental of $202. This charge includes not only the use of the automobile for 20,000 miles but the insurance and maintenance costs. A similar automobile can be purchased for $2,800. In addition to the purchase price, other expenses are:

License plates	$ 22.50
Insurance	456.00
Maintenance	270.00
Depreciation	18% of the cost
Interest on investment	5% of the cost

Determine the amount of money saved by purchasing rather than leasing the automobile.

$202 x 12 = $2,424 rental for 1 year
$2,800 x .18 = $504 depreciation
$2,800 x .05 = $140 interest on investment
$22.50 + 456.00 + 270.00 + 504.00 + 140.00 = $1,392.50 cost of owning
$2,424.00 - 1,392.50 = $1,031.50 saved

RENTING OR OWNING REAL PROPERTY

Level I

Content	Rationale
Owning Property . Interest on investment . Real estate taxes . Straight-line depreciation . Other costs	One who invests in real property sho all the expenses involved in such ow real estate taxes, the interest paid loan, insurance, repairs and upkeep However, there are indirect expenses depreciation of value in one's inves "lost" interest. Several thousands have been invested in real estate ra invested in stocks or bonds or in a The interest income thus lost should one of the expenses of owning proper
Renting Property . Calculating yearly rent	All of the expenses mentioned above in considering what rent to charge. these direct and indirect expenses, or return, which the owner hopes to ment should be included. It would b the owner to omit this. If he did, receive from his tenant is an amount expenses. He would then not be earn

RENTING OR OWNING REAL PROPERTY

Level I

Content	Rationale
stment s preciation	One who invests in real property should be aware of all the expenses involved in such ownership; i.e., real estate taxes, the interest paid on a mortgage loan, insurance, repairs and upkeep of such property.
	However, there are indirect expenses such as: the depreciation of value in one's investment, and the "lost" interest. Several thousands of dollars may have been invested in real estate rather than being invested in stocks or bonds or in a savings account. The interest income thus lost should be considered one of the expenses of owning property.
ly rent	All of the expenses mentioned above should be included in considering what rent to charge. In addition to these direct and indirect expenses, the rate of interest, or return, which the owner hopes to earn on his investment should be included. It would be shortsighted of the owner to omit this. If he did, all he would receive from his tenant is an amount equivalent to his expenses. He would then not be earning anything.

Performance Objectives	Illustrative Problem
Given: A list of expenses in connection with the ownership of real property, the student can total the annual expenses of owning real property.	Whitney purchased a home for $30,000 down and giving a mortgage for the b in connection with owning the home f were: 5% interest on investment of $10,000 Interest on mortgage of $20,000 Property and school taxes Water tax Fire insurance Depreciation What were Whitney's total expenses f $500.00 + 1,400.00 + 1,205.00 + 46.2
Given: . The annual expenses of owning real property and . the expected rate of return (or interest) on his investment, the pupil can calculate: . the yearly rental charge and . the monthly rental charge.	Petraglia paid $22,500 for a house. are estimated to average $1,095. Wh must she charge the tenant in order expenses and receive 9% interest on $22,500 x .09 - $2,025 interest on i $2,025 + 1,095 = $3,120 interest on expenses $3,120 ÷ 12 = $260 monthly rent

Performance Objectives

expenses in connection with the of real property,

total the annual expenses of perty.

penses of owning real property and

rate of return (or interest) on t,

alculate:

ntal charge and

ental charge.

Illustrative Problems

Whitney purchased a home for $30,000, paying $10,000 down and giving a mortgage for the balance. Expenses in connection with owning the home for the first year were:

5% interest on investment of $10,000 = $ 500.00
Interest on mortgage of $20,000 = 1,400.00
Property and school taxes = 1,205.00
Water tax = 46.26
Fire insurance = 99.00
Depreciation = 750.00

What were Whitney's total expenses for the year?

$500.00 + 1,400.00 + 1,205.00 + 46.26 + 99.00 + 750.00 = $4,000.26

Petraglia paid $22,500 for a house. Annual expenses are estimated to average $1,095. What monthly rent must she charge the tenant in order to cover her expenses and receive 9% interest on her investment?

$22,500 x .09 - $2,025 interest on investment

$2,025 + 1,095 = $3,120 interest on investment and expenses

$3,120 ÷ 12 = $260 monthly rent

RENTING OR OWNING REAL PROPERTY

Level I

Content

Comparing the Cost of Renting vs. Owning a Home

Rationale

One consideration which a prospective
make is a comparison of the expenses
and rental of a home. While the inta
to be ignored, the amount spent for e
ownership will probably be the most i
for many people.

Not to be overlooked in home ownershi
advantages for allowable deductions f
taxes and interest on the mortgage.
taken by the renter, even though his
these items, as seen in a prior secti

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RENTING OR OWNING REAL PROPERTY

Level II

Calculating Rate of Return on Investment

Since there are many ways in which to
funds--in stocks, bonds, a savings ac
real property, the question arises: w
best investment to make? The greatest
or yield may not indicate the best in
Rather, the rate or percentage of yiel

Of course, the question of risk should
in making any investment. Ordinarily,
risk, the greater should be the rate o

A person with limited funds to invest
with a substantially safe investment i
where accounts are guaranteed by the F
Insurance Corporation. However, as an
acquires additional funds, he will loo
with greater returns. This may lead h
in bonds, stocks, and ultimately in re

RENTING OR OWNING REAL PROPERTY

Level I

Content	Rationale
enting vs. Owning a Home	One consideration which a prospective home owner should make is a comparison of the expenses of home ownership and rental of a home. While the intangibles are not to be ignored, the amount spent for either rental or ownership will probably be the most important factor for many people. Not to be overlooked in home ownership are the tax advantages for allowable deductions for real estate taxes and interest on the mortgage. These cannot be taken by the renter, even though his rent included these items, as seen in a prior section of this unit.

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RENTING OR OWNING REAL PROPERTY

Level II

urn on Investment	Since there are many ways in which to invest one's funds--in stocks, bonds, a savings account, and in real property, the question arises: which is the best investment to make? The greatest dollar return or yield may not indicate the best investment. Rather, the rate or percentage of yield should be used. Of course, the question of risk should be considered in making any investment. Ordinarily, the greater the risk, the greater should be the rate of return. A person with limited funds to invest might be satisfied with a substantially safe investment in a savings bank where accounts are guaranteed by the Federal Deposit Insurance Corporation. However, as an investor acquires additional funds, he will look for investments with greater returns. This may lead him to investing in bonds, stocks, and ultimately in real property.

Performance Objectives

Given:

- The monthly rental charge and
- the estimated annual expenses of owning a home,

the student can find:

- the annual rental charge,
- the annual expenses of owning a home, and
- the amount saved by doing whichever is less expensive.

Illustrative Problems

Wing was renting a home for $225 a month, wh later purchased. The total cost of owning h home the first year was $2,478. How much mo Wing save during the year by owning the home

$225 x 12 = $2,700 yearly rental

$2,700 - 2,478 = $222 amount saved

****

Given:

- The rental income from an investment in real property,
- the expenses of owning such property, and
- the amount invested in such property,

the pupil can determine:

- the net income from the investment and
- the rate of return on the investment.

As an investment, Murphy purchased a duplex $37,000. He rented each apartment for $248 During the year his expenses on the house we taxes and insurance, $1,494; repairs, $388; depreciation, 4% of the cost. What rate of he receive on his cash investment?

$248 x 12 = $2,976 rent from 1 apartment

$2,976 x 2 = $5,952 rent from 2 apartments

$37,000 x .04 = $1,480 depreciation

$1,494 + 388 + 1,480 = $3,362 total expenses

$5,952 - 3,362 = $2,590 income

$2,590 ÷ 37,000 = 7% rate of return on inves

formance Objectives

l charge and

ual expenses of owning a home,

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charge,

es of owning a home, and

y doing whichever is less

Illustrative Problems

Wing was renting a home for $225 a month, which he later purchased. The total cost of owning his own home the first year was $2,478. How much money did Wing save during the year by owning the home?

$225 x 12 = $2,700 yearly rental

$2,700 - 2,478 = $222 amount saved

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$1,494 + 388 + 1,480 = $3,362 total expenses

$5,952 - 3,362 = $2,590 income

$2,590 ÷ 37,000 = 7% rate of return on investment

RENTING OR OWNING REAL PROPERTY

Level II

Content	Rationale
Determining Amount To Be Raised by Taxes	Most local government units receive a la their income from local real property ta sources might contribute to help meet lo but the property owner bears the major bu
Calculating Tax Rate	Each town, city, county, or school distri rate depending upon the amount of *assesse* of all taxable real property in that area of other income received from Federal and ments, and the amount to be raised locall other assessments, and the amount needed its planned budget.

RENTING OR OWNING REAL PROPERTY

Level II

Content	Rationale
e Raised by Taxes	Most local government units receive a large portion of their income from local real property taxes. Other sources might contribute to help meet local expenses, but the property owner bears the major burden.
	Each town, city, county, or school district sets a tax rate depending upon the amount of *assessed valuation* of all taxable real property in that area, the amount of other income received from Federal and State governments, and the amount to be raised locally through other assessments, and the amount needed to pay for its planned budget.

Performance Objectives

Given:

. The expenses of a local unit of government and

. the amount of other income to be received,

the student can find the amount to be raised locally.

Given:

. The amount to be raised by taxes and

. the total assessed valuation,

the student can compute:

. the tax rate and

. the amount of tax per $100 or per $1,000.

Illustrative Problems

The total amount of money needed for the expe
a certain city was $1,278,400. Of this amoun
$23,800 would be received from fines, license
state aid. The remaining amount would come f
real estate taxes. What is the amount to be
by taxes?

$1,278,400 - 23,800 = $1,254,600 amount to b

The amount of income to be raised by taxes in
certain city is $1,254,600. The total assess
valuation of all taxable real estate in the c
$36,900,000. What tax rate, expressed in dol
per $1,000, should be levied in order to rais
necessary funds?

$1,254,600 ÷ $36,900,000 = .034 per $1.

$34 per $1,000.

erformance Objectives

a local unit of government and
ther income to be received,
ind the amount to be raised

e raised by taxes and
sed valuation,
ompute:
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ax per $100 or per $1,000.

Illustrative Problems

The total amount of money needed for the expenses of a certain city was $1,278,400. Of this amount, $23,800 would be received from fines, licenses, and state aid. The remaining amount would come from real estate taxes. What is the amount to be raised by taxes?

$1,278,400 - 23,800 = $1,254,600 amount to be raised

The amount of income to be raised by taxes in a certain city is $1,254,600. The total assessed valuation of all taxable real estate in the city is $36,900,000. What tax rate, expressed in dollars per $1,000, should be levied in order to raise the necessary funds?

$1,254,600 ÷ $36,900,000 = .034 per $1.

$34 per $1,000.

RENTING OR OWNING REAL PROPERTY

Level II

Content	Rationale
Mortgage Amortization	The dictionary defines *amortize*, "to provide gradual repayment of a mortgage by contributi sinking fund at the time of each periodic int payment." A prospective investor in real property is in in learning the amount of his monthly payment principal and interest for the duration of hi Most mortgages are financed over a 10 to 30 y The amount due each month can be found in amo charts. While interest rates fluctuate with financial the rate established at the time the mortgage taken out prevails throughout the life of the

RENTING OR OWNING REAL PROPERTY

Level II

Content

Rationale

The dictionary defines *amortize*, "to provide for the gradual repayment of a mortgage by contributing to a sinking fund at the time of each periodic interest payment."

A prospective investor in real property is interested in learning the amount of his monthly payments for principal and interest for the duration of his mortgage. Most mortgages are financed over a 10 to 30 year period. The amount due each month can be found in amortization charts.

While interest rates fluctuate with financial conditions, the rate established at the time the mortgage is first taken out prevails throughout the life of the mortgage.

Performance Objectives

Given:

- The principal amount of a mortgage,
- the rate of interest charged,
- the time over which the mortgage is to be financed, and
- the tables for amortization of mortgage loans,

the student can look up the amount of each monthly payment due on the mortgage.

Given: An amortization table for various amounts for different periods of time,

the student can find:

- the total payments for different mortgages,
- the amount of interest paid for different mortgages, and
- the differences in interest charges for a given mortgage for various lengths of time.

Illustrative Proble

Monthly Payment To Amortize A L

Loan	10 Years	15 Years	20 Years
$ 1,000	$ 11.88	$ 9.28	$ 8.06
2,000	23.75	18.55	16.12
5,000	59.36	46.36	40.28
10,000	118.71	92.71	80.56
15,000	178.06	139.06	120.84
20,000	237.41	185.41	161.12

What monthly payment is necessary t
of $15,000 at 7 1/2% for 25 years?

$110.85 answer

Smith obtained a $20,000 mortgage l
interest, on his new home and agree
principal and interest over a perio
(1) What amount of money will he ha
during the life of this mortgage?
money would he have saved in intere
the principal and interest over a p

1. $161.12 x 12 = $1,933.44 yearly
   $1,933.44 x 20 = $38,668.80 pay
   $38,668.80 - 20,000.00 = $18,66
2. $185.41 x 12 = $2,224.92 yearly
   $2,224.92 x 15 = $33,373.80 pay
   $33,373.80 - $20,000.00 = $13,3
   $18,668.80 - 13,373.80 = $5,295

ance Objectives

of a mortgage,

charged,

ne mortgage is to be

zation of mortgage loans,

the amount of each monthly
gage.

able for various amounts
iods of time,

r different mortgages,

t paid for different

terest charges for a given
lengths of time.

Illustrative Problems

Monthly Payment To Amortize A Loan at 7 1/2%

Loan	10 Years	15 Years	20 Years	25 Years	30 Years
$ 1,000	$ 11.88	$ 9.28	$ 8.06	$ 7.39	$ 7.00
2,000	23.75	18.55	16.12	14.78	13.99
5,000	59.36	46.36	40.28	36.95	34.97
10,000	118.71	92.71	80.56	73.90	69.93
15,000	178.06	139.06	120.84	110.85	104.89
20,000	237.41	185.41	161.12	147.80	139.85

What monthly payment is necessary to amortize a loan of $15,000 at 7 1/2% for 25 years?

$110.85 answer

Smith obtained a $20,000 mortgage loan, at 7 1/2% interest, on his new home and agreed to pay the principal and interest over a period of 20 years. (1) What amount of money will he have paid in interest during the life of this mortgage? (2) What amount of money would he have saved in interest if he had paid the principal and interest over a period of 15 years?

1. $161.12 x 12 = $1,933.44 yearly payment
   $1,933.44 x 20 = $38,668.80 payments for 20 years
   $38,668.80 - 20,000.00 = $18,668.80 interest

2. $185.41 x 12 = $2,224.92 yearly payment
   $2,224.92 x 15 = $33,373.80 payments for 15 years
   $33,373.80 - $20,000.00 = $13,373.80 interest
   $18,668.80 - 13,373.80 = $5,295.00 saved

RENTING OR OWNING REAL PROPERTY

Level II

Content | Rationale

Gain or Loss on Sale of Property

An investor in real property may fin
property values make it advisable to
If this occurs, the gain or loss on
calculated for tax purposes. He shou
this calculation all cost incurred i
maintaining the property. The diffe
net proceeds on the sale and the tot
taxable income or deductible loss.

If there is a gain on the sale, the
payment of income taxes if the gain i
real property within 6 months.

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SOCIAL SECURITY CONTRIBUTIONS

Level I

Calculate Amount of Contributions

Social Security taxes are now impose
all employees and represent one of th
from the total gross wages earned. T
used for several benefits: retiremen
dependent children, and disability, t

These taxes are deductions not only f
total wages, but are matched by an eq
upon the employer. In this way, a la
credited to the wage earner's account

Many self-employed people are also co
Security. Their rate is higher than
employee's and of course is not match

RENTING OR OWNING REAL PROPERTY

Level II

Content	Rationale
le of Property	An investor in real property may find that changing property values make it advisable to sell the property. If this occurs, the gain or loss on the sale must be calculated for tax purposes. He should include in this calculation all cost incurred in purchasing and maintaining the property. The difference between the net proceeds on the sale and the total cost represents taxable income or deductible loss. If there is a gain on the sale, the investor may avoid payment of income taxes if the gain is invested in new real property within 6 months.

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SOCIAL SECURITY CONTRIBUTIONS

Level I

Contributions	Social Security taxes are now imposed on practically all employees and represent one of the major deductions from the total gross wages earned. These taxes are used for several benefits: retirement, widows and dependent children, and disability, to name a few. These taxes are deductions not only from the employee's total wages, but are matched by an equal tax imposed upon the employer. In this way, a larger amount is credited to the wage earner's account. Many self-employed people are also covered by Social Security. Their rate is higher than that of an employee's and of course is not matched.

Performance Objectives	Illustrative Problems
Given: . The original cost of real property, . the costs of taxes and maintenance while the property is owned, and . the net proceeds on the sale of this property, the student should be able to determine the net gain or loss on the sale of the property.	Five years ago, Bahn purchased a house fo This year he sold the house for $27,500. connection with maintaining the property a $2,250. What was Bahn's net gain on buyi the property? $27,500 - 21,000 = $6,500 gross gain on sa $6,500 - 2,250 = $4,250 net gain on sale

****

Given: . A weekly, semi-weekly, or monthly amount of gross wages earned and . the current FICA rate of deduction, the student can figure the amount of Social Security deduction for that pay period.	What amount of money will be deducted for (Social Security) contributions from a sa at the rate of 5.85%? $130 x .0585 = $7.61 The teacher should substitute current rat maximum deductions in these problems.

Performance Objectives	Illustrative Problems
ost of real property, axes and maintenance while the ned, and eds on the sale of this property, ld be able to determine the net the sale of the property.	Five years ago, Bahn purchased a house for $21,000. This year he sold the house for $27,500. Expenses in connection with maintaining the property amounted to $2,250. What was Bahn's net gain on buying and selling the property? $27,500 - 21,000 = $6,500 gross gain on sale $6,500 - 2,250 = $4,250 net gain on sale

****

i-weekly, or monthly amount of arned and ICA rate of deduction, figure the amount of Social ion for that pay period.	What amount of money will be deducted for FICA (Social Security) contributions from a salary of $130 at the rate of 5.85%? $130 x .0585 = $7.61 The teacher should substitute current rates and maximum deductions in these problems.

SOCIAL SECURITY CONTRIBUTIONS

Level I

Content	Rationale
Maximum Amount of Contribution	Over the years as the rate of deduction has i so too has the base amount on which the Socia tax is calculated. This was the original int the writers of Social Security legislation. Once an employee has passed the base amount o this tax is calculated, his employer is no lo required to make any further deduction for th calendar year. If an employee has another jo which another employer is making a tax deduct is possible that the maximum allowable deduct exceeded. In that case, the employee may cla refund or apply it against any income taxes o he prepares his income tax return.

SOCIAL SECURITY CONTRIBUTIONS

Level I

Content	Rationale
ribution	Over the years as the rate of deduction has increased so too has the base amount on which the Social Security tax is calculated. This was the original intent of the writers of Social Security legislation. Once an employee has passed the base amount on which this tax is calculated, his employer is no longer required to make any further deduction for that calendar year. If an employee has another job in which another employer is making a tax deduction, it is possible that the maximum allowable deduction is exceeded. In that case, the employee may claim a refund or apply it against any income taxes owed when he prepares his income tax return.

Performance Objectives

Given:

. The total annual wages earned by an employee and

. the rate and base salary upon which the tax is calculated,

the student can determine the maximum amount of contribution to apply for that employee.

Illustrative Problems

The rate for the FICA is 5.85% on earn
including $10,800 a year. This year,
already earned $14,450. What is the a
FICA tax?

$10,800 x .0585 = $631.80

rformance Objectives

wages earned by an employee and
e salary upon which the tax is

termine the maximum amount of
ply for that employee.

Illustrative Problems

The rate for the FICA is 5.85% on earnings up to and including $10,800 a year. This year, a salesman has already earned $14,450. What is the amount of his FICA tax?

$10,800 x .0585 = $631.80

SOCIAL SECURITY CONTRIBUTIONS

Level II

Content

Rationale

Calculating Benefits

EXAMPLES OF MONTHLY CASH PAYMENTS UNDER SOCIAL SECURITY

Average yearly earnings after 1950	**$923 or less**	**$3,000**	**$4,200**	**$5,400**	**$6,600**	**$7,800**	**$9,000**
Retired worker 65 or older Disabled worker under 65	$ 84.50	$174.80	$213.30	$250.60	$288.40	$331.00	$354.50
Wife 65 or older	42.30	87.40	106.70	125.30	144.20	165.50	177.30
Retired worker at 62	67.60	139.90	170.70	200.50	230.80	264.80	283.60
Wife at 62, no child	31.80	65.60	80.10	94.00	108.20	124.20	133.00
Widow at 60	73.30	125.10	152.60	179.30	206.30	236.70	253.50
Widow or widower at 62	84.50	144.30	176.00	206.80	238.00	273.10	292.50
Disabled widow at 50	51.30	87.50	106.80	125.50	144.30	165.60	177.30
Wife under 65 and one child	42.30	92.50	157.40	217.30	233.90	248.30	265.90
Widowed mother and one child	126.80	262.20	320.00	376.60	432.60	496.60	531.80
Widowed mother and two children	126.80	267.30	370.70	467.90	522.30	579.30	620.40
One child of retired or disabled worker	42.30	87.40	106.70	125.30	144.20	165.50	177.30
One surviving child	84.50	131.10	160.00	188.00	216.30	248.30	265.90
Maximum family payment	126.80	267.30	370.70	467.90	522.30	579.30	620.40

Performance Objectives

Given:

- A table of Social Security monthly benefits,
- the average yearly earnings of a worker, and
- the age of the retired worker and wife,

the student can find:

- the amount payable to a retired worker,
- the amount payable to his wife,
- the amount payable to a dependent widow,
- the amount payable to a widowed mother with one or two children, and
- the amount payable to a dependent child of a retired or disabled worker.

Illustrative Problems

Use the table at the left to answer the follow questions:

A man who has an average yearly earnings of $5 retires at age 68. (1) What will be the amoun monthly Social Security check if $5.60 is dedu Medicare? (2) What will be the amount of his Social Security check if she is 62 years old?

(1) $250.60 - $5.60 = $245.00
(2) $ 94.00

Thomas Jones is retiring at age 67. His avera ings are $6,600. His wife is 69. What total payment will Jones and his wife receive if $5. deducted from each check for Medicare?

$288.40 - 5.60 = $282.80
$144.20 - 5.60 = $138.60
$282.80 + 138.60 = $421.40

A man who has average yearly earnings of $6,6 at age 65. He then dies. What will be the a of the monthly Social Security check to his w there are three dependent children?

Maximum family payment = $522.30

mance Objectives

Security monthly benefits,

earnings of a worker, and

ired worker and wife,

:

to a retired worker,

to his wife,

to a dependent widow,

to a widowed mother with one
nd

to a dependent child of a
d worker.

Illustrative Problems

Use the table at the left to answer the following questions:

A man who has an average yearly earnings of $5,400 retires at age 68. (1) What will be the amount of his monthly Social Security check if $5.60 is deducted for Medicare? (2) What will be the amount of his wife's Social Security check if she is 62 years old?

(1) $250.60 - $5.60 = $245.00
(2) $ 94.00

Thomas Jones is retiring at age 67. His average earnings are $6,600. His wife is 69. What total monthly payment will Jones and his wife receive if $5.60 is deducted from each check for Medicare?

$288.40 - 5.60 = $282.80
$144.20 - 5.60 = $138.60
$282.80 + 138.60 = $421.40

A man who has average yearly earnings of $6,600 retires at age 65. He then dies. What will be the amount of the monthly Social Security check to his widow, if there are three dependent children?

Maximum family payment = $522.30

LIFE INSURANCE

Level I

Content

Calculating Premiums

Rationale

The primary reason one takes out li
protect dependents against financia
insured dies.

It is important that one acquaint h
benefits and costs of each type of
before he purchases it.

For example, *straight* or *ordinary l*
cheaper to purchase than *limited pa*
must pay it for as long as he lives
insurance is more expensive than li
but at the end of a specified perio
collects the face value of the poli

One can determine the premium cost
policies from the premium rate tabl

LIFE INSURANCE

Level I

Content

iums

Rationale

The primary reason one takes out life insurance is to protect dependents against financial loss if the insured dies.

It is important that one acquaint himself with the benefits and costs of each type of life insurance before he purchases it.

For example, *straight* or *ordinary life insurance* is cheaper to purchase than *limited payment life*, but one must pay it for as long as he lives. *Endowment* insurance is more expensive than limited payment life; but at the end of a specified period, the insured collects the face value of the policy.

One can determine the premium cost of insurance policies from the premium rate tables.

Performance Objectives

Given: A table of annual premiums for straight life, 20-payment life, 20-year endowment, and term insurance at various age categories,

the student can:

- pick out the correct premium rate for any age listed in any of the insurance categories and
- apply the premium rate to the purchase of a specified amount of insurance to obtain the premium cost.

Illustrative Problems

Use a chart similar to the one shown below t
the following questions:

Determine the annual premium on a renewable
convertible 5-year term policy for $4,000 pu
by a male at age 25.

$4,000 ÷ 1,000 = 4
$3.49 x 4 = $13.96

At age 35, a man purchases a $5,000 20-payme
policy and a $2,500 20-year endowment policy
mine the total annual premium.

$5,000 ÷ 1,000 = 5
$27.83 x 5 = $139.15

$2,500 ÷ 1,000 = 2.5
$42.14 x 2.5 = $105.35

$139.15 + 105.35 = $244.50 total annual prem

ANNUAL PREMIUM PER $1,000 OF INSURANCE

Age at Issue	Straight Life	20-Payment Life	20-Year Endowment	5-Year Term
15	$ 9.31	$17.23	$41.08	$3.29
20	10.80	19.28	41.13	3.37
25	12.64	21.48	41.27	3.49
30	15.01	24.40	41.56	3.73
35	18.09	27.83	42.14	4.45
40	22.31	31.75	43.44	6.19
45	27.58	36.59	45.54	9.10

formance Objectives

ual premiums for straight life,
fe, 20-year endowment, and term
various age categories,

ect premium rate for any age
he insurance categories and

rate to the purchase of a
of insurance to obtain the

Illustrative Problems

Use a chart similar to the one shown below to answer the following questions:

Determine the annual premium on a renewable and convertible 5-year term policy for $4,000 purchased by a male at age 25.

$4,000 ÷ 1,000 = 4
$3.49 x 4 = $13.96

At age 35, a man purchases a $5,000 20-payment life policy and a $2,500 20-year endowment policy. Determine the total annual premium.

$5,000 ÷ 1,000 = 5
$27.83 x 5 = $139.15

$2,500 ÷ 1,000 = 2.5
$42.14 x 2.5 = $105.35

$139.15 + 105.35 = $244.50 total annual premium

ANNUAL PREMIUM PER $1,000 OF INSURANCE

Age at Issue	Straight Life	20-Payment Life	20-Year Endowment	5-Year Term
15	$ 9.31	$17.23	$41.08	$3.29
20	10.80	19.28	41.13	3.37
25	12.64	21.48	41.27	3.49
30	15.01	24.40	41.56	3.73
35	18.09	27.83	42.14	4.45
40	22.31	31.75	43.44	6.19
45	27.58	36.59	45.54	9.10

LIFE INSURANCE

Level II

Content

Calculating Non-Forfeiture Values

At End of Policy Year	For Each $1,000 of Face Amount		For Face Amount	
	Reserve or Net Cash Value	Paid-up Life Insurance	Extended Term Insurance	
			Years	Days
1	9.43	26.42	4	326
2	19.01	51.87	7	299
3	28.70	76.26	9	300
4	38.48	99.61	11	90
5	48.33	121.89	12	104
6	58.24	143.16	13	20
7	68.17	163.36	13	222
8	78.14	182.60	14	3
9	88.11	200.83	14	95
10	98.07	218.09	14	148
11	107.97	234.33	14	166
12	117.79	249.57	14	157
13	127.50	263.81	14	122
14	137.05	277.01	14	66
15	146.38	289.13	13	355
16	155.45	300.16	14	151
20	188.07	332.90	15	113
25	214.69	343.99	15	83

Rationale

Permanent or life insurance such as straight
limited payment, or endowment policies have
values. This means that a policyholder can
table, usually included on the policy contra
determine the net cash loan value or the amo
up life insurance he can get for the accumula
reserve. This should be done before the pol
stops payment of the premium.

LIFE INSURANCE

Level II

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lues

)	For Face Amount	
-up Life rance	Extended Term Insurance	
	Years	Days
6.42	4	326
1.87	7	299
6.26	9	300
9.61	11	90
1.89	12	104
3.16	13	20
3.36	13	222
2.60	14	3
0.83	14	95
8.09	14	148
4.33	14	166
9.57	14	157
3.81	14	122
7.01	14	66
9.13	13	355
0.16	14	151
2.90	15	113
3.99	15	83

Rationale

Permanent or life insurance such as straight life, limited payment, or endowment policies have guaranteed values. This means that a policyholder can consult a table, usually included on the policy contract, to determine the net cash loan value or the amount of paid-up life insurance he can get for the accumulated reserve. This should be done before the policyholder stops payment of the premium.

Performance Objectives

Given:

- The face value of the policy,
- the age of the policy, and
- the guaranteed value per $1,000 face amount,

the student can look up:

- the cash value,
- the amount of paid-up life insurance, and
- the duration of extended term insurance.

Illustrative Problems

Use a table similar to the one shown on page
answer the following problem:

Mr. Idleman has decided to stop paying premi
$10,000 whole life policy and have the compa
policy "Paid-up." What is the value of the
insurance if Mr. Idleman has been paying pre
13 years?

$2,638.10

What is his policy's net cash value at that

$1,275

rformance Objectives

f the policy,

olicy, and

alue per $1,000 face amount,

ok up:

id-up life insurance, and

extended term insurance.

Illustrative Problems

Use a table similar to the one shown on page 130 to answer the following problem:

Mr. Idleman has decided to stop paying premiums on his $10,000 whole life policy and have the company mark the policy "Paid-up." What is the value of the paid-up insurance if Mr. Idleman has been paying premiums for 13 years?

$2,638.10

What is his policy's net cash value at that same date?

$1,275

LIFE INSURANCE

Level II

Content	Rationale
Comparative Costs of Various Types of Insurance Plans	When purchasing life insurance, the ri consult a reliable agent. There ar to this kind of purchase, such as c age of the applicant, and what one

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FIRE INSURANCE

Level I

Calculating Premiums	The purpose of insuring a house is t homeowner against loss resulting fro property caused directly from fire, The insurer can purchase, for an addi *extended coverage*. Premium rates are usually quoted in For example, an insurance company ma $.60 per $100 of insurance.

LIFE INSURANCE

Level II

Content	Rationale
ous Types of Insurance Plans	When purchasing life insurance, the buyer should consult a reliable agent. There are various aspects to this kind of purchase, such as coverage desired, age of the applicant, and what one can afford.

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FIRE INSURANCE

Level I

The purpose of insuring a house is to protect the homeowner against loss resulting from destruction of property caused directly from fire, lightening, etc. The insurer can purchase, for an additional premium, *extended coverage*.

Premium rates are usually quoted in $100 units. For example, an insurance company may quote a price of $.60 per $100 of insurance.

Performance Objectives	Illustrative
Given: Table of premium rates at various ages and for straight or ordinary life, limited payment life, endowment, and term, the student can calculate costs and make comparisons between any kinds of life insurance at any age levels on the table. Given: Word problems on the purchasing of different types of life insurance at different ages, the pupil can evaluate the information from the premium rate tables, and substantiate his decision.	
**	
Given: . Market value of a house, . percent of the market value of the house that is insured, and . the premium rate per $100 of insurance coverage, the learner can find the annual premium.	A house valued at $22,000 is i of its value at $.33 per hundr amount of the annual premium? $22,000 x .80 = $17,600 amount $17,600 ÷ 100 = 176 $.33 x 176 = $58.08 annual pre

rformance Objectives

mium rates at various ages and
or ordinary life, limited pay-
ndowment, and term,

lculate costs and make comparisons
of life insurance at any age
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s on the purchasing of different
e insurance at different ages,

uate the information from the
s, and substantiate his decision.

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a house,

arket value of the house that is

per $100 of insurance coverage,

nd the annual premium.

Illustrative Problems

A house valued at $22,000 is insured annually for 80% of its value at $.33 per hundred dollars. What is the amount of the annual premium?

$22,000 x .80 = $17,600 amount of insurance carried

$17,600 ÷ 100 = 176

$.33 x 176 = $58.08 annual premium

FIRE INSURANCE

Level I

Content	Rationale
Simple Proportionate Losses - Two Companies	Sometimes a homeowner will insure his two or more companies. In case of fi company will pay that part of the los to the amount of each policy.
Payment of Loss or Face Value	The purpose of fire insurance is to c loss up to the limits of the policy. cannot expect to be paid more than th loss, nor the limit of the coverage. However, some property owners take le the total market value of their prope They are, in a sense, gambling that a totally destroy their property.

FIRE INSURANCE

Level I

ontent	Rationale
s - Two Companies	Sometimes a homeowner will insure his property with two or more companies. In case of fire loss, each company will pay that part of the loss in proportion to the amount of each policy.
ue	The purpose of fire insurance is to cover the insured's loss up to the limits of the policy. The insured cannot expect to be paid more than the amount of the loss, nor the limit of the coverage. However, some property owners take less coverage than the total market value of their property. They are, in a sense, gambling that a fire will not totally destroy their property.

Performance Objectives	Illustrative Pr
Given: . Amount of insurance taken out with each of two insurance companies and . the amount of the fire loss, the student can determine the amount of money the insured will collect from each fire insurance company.	Kravitz insured his office buil Company A and for \$32,000 with of \$29,000 occurred. What amou Kravitz collect from each of th companies? \$48,000 Co. A 32,000 Co. B \$80,000 total insurance on the $\frac{\$48,000}{80,000} = \frac{3}{5} \times \$29,000 = \$17,40$ $\frac{\$32,000}{80,000} = \frac{2}{5} \times \$29,000 = \$11,60$
Given: . The market value of a house, . the percent of its value for which insurance is purchased, and . the amount of the fire loss, where the loss from fire is less than the face value of the policy, the student can compute the amount of the loss the insurance company will pay.	Brown insures his house valued its value. A fire loss of \$18, amount of money will Brown coll insurance company? \$32,000 x .75 = \$24,000 amount \$18,700 amount insurance compar

formance Objectives

ce taken out with each of two
es and

fire loss,

ermine the amount of money the
t from each fire insurance

of a house,

s value for which insurance

fire loss,

fire is less than the face
, the student can compute the
the insurance company will pay.

Illustrative Problems

Kravitz insured his office building for $48,000 with Company A and for $32,000 with Company B. A fire loss of $29,000 occurred. What amount of money should Kravitz collect from each of these two fire insurance companies?

$48,000 Co. A
32,000 Co. B
$80,000 total insurance on the property

$$\frac{\$48{,}000}{80{,}000} = \frac{3}{5} \text{ x } \$29{,}000 = \$17{,}400 \text{ Co. A will pay}$$

$$\frac{\$32{,}000}{80{,}000} = \frac{2}{5} \text{ x } \$29{,}000 = \$11{,}600 \text{ Co. B will pay}$$

Brown insures his house valued at $32,000 for 75% of its value. A fire loss of $18,700 occurs. What amount of money will Brown collect from the fire insurance company?

$32,000 x .75 = $24,000 amount of insurance carried

$18,700 amount insurance company will pay

FIRE INSURANCE

Level II

Content	Rationale
Comparison of Premium Cost for More Than One Year	Insurance companies will sometim when insurance is purchased for than one year. For example, for a 3-year policy offered an insurance cost of 2.7 or a saving of .3 of the annual
Rebate Upon Cancellation	If a policy is canceled by the i must calculate the *rebate*, or *re* basis. The rebate must be in pro unexpired time (unused portion of

FIRE INSURANCE

Level II

Content	Rationale
st for More Than One Year	Insurance companies will sometimes offer special rates when insurance is purchased for longer periods of time than one year. For example, for a 3-year policy, the insured is offered an insurance cost of 2.7 times the annual rate or a saving of .3 of the annual rate of insurance.
	If a policy is canceled by the insurance company, it must calculate the *rebate*, or *refund*, on a *pro-rata* basis. The rebate must be in proportion to the unexpired time (unused portion of the policy).

Performance Objectives	Illustrative Problem
Given: . An annual rate per $100 of coverage, . term rate of 2.7 times the annual premium for 3-year policy, and . the amount of insurance to be purchased, the pupil can calculate: . the annual premium, . cost of purchasing annual policies for three consecutive years, . the cost of purchasing a 3-year policy (2.7 times the annual rate), and . the amount saved by purchasing the 3-year policy.	When purchasing a fire insurance pol certain city is $.33 per hundred dol The rate for a 3-year policy is 2.7 rate. What amount of money is savec single 3-year policy for $25,000 rat 1-year policies for the same coverag $25,000 ÷ 100 = 250 $.33 x 250 = $82.50 premium for a 1- $82.50 x 3 = $247.50 cost of three 1 $.33 x 2.7 = $.891 rate for a 3-yea $250 x .891 = $222.75 premium for a $247.50 - $222.75 = $24.75 saved
Given: . The amount of the insurance policy, . the annual premium, and . the unexpired time or the percent of the premium retained by the insurance company upon date of cancellation, the student should be able to calculate the rebate or refund.	On February 1, Carroll took out a 1- policy on his house for $28,000, pa mium of $.33 per hundred dollars of months later the company canceled t How much money should be refunded t the yearly premium is retained by t $28,000 ÷ 100 = 280 $.33 x 280 = $92.40 annual premium $92.40 x .25 = $23.10 retained $92.40 - 23.10 = $69.30 refunded OR $92.40 x .75 = $69.30 refunded $92.40 - 69.30 = $23.10 retained

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the annual premium for

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the percent of the premium
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le to calculate the rebate

Illustrative Problems

When purchasing a fire insurance policy, the rate in a certain city is \$.33 per hundred dollars of coverage. The rate for a 3-year policy is 2.7 times the annual rate. What amount of money is saved by purchasing a single 3-year policy for \$25,000 rather than three 1-year policies for the same coverage?

\$25,000 ÷ 100 = 250

\$.33 x 250 = \$82.50 premium for a 1-year policy

\$82.50 x 3 = \$247.50 cost of three 1-year policies

\$.33 x 2.7 = \$.891 rate for a 3-year policy

\$250 x .891 = \$222.75 premium for a 3-year policy

\$247.50 - \$222.75 = \$24.75 saved

On February 1, Carroll took out a 1-year fire insurance policy on his house for \$28,000, paying an annual premium of \$.33 per hundred dollars of coverage. Three months later the company canceled that type of policy. How much money should be refunded to Carroll if 25% of the yearly premium is retained by the insurance company?

\$28,000 ÷ 100 = 280

\$.33 x 280 = \$92.40 annual premium

\$92.40 x .25 = \$23.10 retained

\$92.40 - 23.10 = \$69.30 refunded

OR

\$92.40 x .75 = \$69.30 refunded

\$92.40 - 69.30 = \$23.10 retained

FIRE INSURANCE

Level II

Content	Rationale
Co-insurance Clause	Most fires result in partial loss to pr most unusual for a fire to completely d The insurance companies realize the rel part of homeowners to take out sufficie For this reason, the insurance companie reduced rate as an incentive to homeown insure their property for an amount not specified percent of the market value o (60%, 70%, 80%, etc.) For example: On an 80% co-insurance po will pay for all losses up to the face policy, if insurance is purchased at 80 of the property. If, on the other hand, a homeowner purc the minimum percent in the co-insurance company will only pay the fractional pa which is the ratio of the actual amount to the minimum amount. $\frac{\text{face value of policy}}{\text{co-insurance rate} \times \text{value of property}} \times \text{fire loss}$

FIRE INSURANCE

Level II

Content

Rationale

Most fires result in partial loss to property. It is most unusual for a fire to completely destroy a home. The insurance companies realize the reluctance on the part of homeowners to take out sufficient insurance. For this reason, the insurance companies will offer a reduced rate as an incentive to homeowners if they will insure their property for an amount not less than a specified percent of the market value of their home. (60%, 70%, 80%, etc.)

For example: On an 80% co-insurance policy the company will pay for all losses up to the face value of the policy, if insurance is purchased at 80% of the value of the property.

If, on the other hand, a homeowner purchases less than the minimum percent in the co-insurance clause, the company will only pay the fractional part of the loss which is the ratio of the actual amount of insurance to the minimum amount.

$$\frac{\text{face value of policy}}{\text{co-insurance rate} \times \text{value of property}} \times \text{fire loss}$$

Performance Objectives

Given:

- The face value of the policy and the percent of the co-insurance clause,
- the market value of the property, and
- the amount of the fire loss,

the pupil can find:

- the ratio or fractional part of the actual face value to the minimum insurance and
- the amount of the loss the company will cover.

Illustrative Problems

Messier had a fire in his $40,000 house
insured for 80% of its value under the
clause of his homeowner's policy. How
collect from his insurance company if t
was $32,000?

$40,000 x .80 = $32,000 80% value

$\frac{\$32{,}000 \text{ insurance}}{32{,}000 \text{ 80\% value}}$ x $32,000 fire damag

Zimmerman purchased a fire insurance p
on his office building, which was valu
This policy contained an 80% co-insura
If a fire loss of $48,000 occurred, wh
money should Zimmerman collect from th
company?

$150,000 x .80 = $120,000

$\frac{\$110{,}000}{120{,}000} = \frac{11}{12}$ x $48,000 = $44,000 amou
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rformance Objectives

of the policy and the percent of
clause,

of the property, and

e fire loss,

d:

ctional part of the actual face
imum insurance and

e loss the company will cover.

Illustrative Problems

Messier had a fire in his $40,000 house, which he had insured for 80% of its value under the co-insurance clause of his homeowner's policy. How much did Messier collect from his insurance company if the fire damage was $32,000?

$40,000 x .80 = $32,000 80% value

$$\frac{\$32{,}000 \text{ insurance}}{32{,}000 \text{ 80\% value}} \times \$32{,}000 \text{ fire damage} = \$32{,}000 \text{ collectible}$$

Zimmerman purchased a fire insurance policy for $110,000 on his office building, which was valued at $150,000. This policy contained an 80% co-insurance clause. If a fire loss of $48,000 occurred, what amount of money should Zimmerman collect from the insurance company?

$150,000 x .80 = $120,000

$$\frac{\$110{,}000}{120{,}000} = \frac{11}{12} \times \$48{,}000 = \$44{,}000 \text{ amount insurance company will pay}$$

AUTOMOBILE INSURANCE

Level I

Content	Rationale
Costs of Various Coverages	There are various types of automobile insur available, such as: bodily injury, property damage, comprehensive, collision, Each automobile owner should be aware of th in each category so he can purchase the pro he desires. Annual premiums are usually quoted in table to types of coverage, limits, and kinds of (business, pleasure, etc.).
Calculating Premiums	Special tables showing "Rates for Higher Li be used to calculate the increase from a lo to a higher limit of insurance. For exampl find that you can increase your bodily inju from 10/20,000 to 25/50,000 by paying 13% m

AUTOMOBILE INSURANCE

Level I

Content

ages

Rationale

There are various types of automobile insurance available, such as:

bodily injury,
property damage,
comprehensive,
collision,

Each automobile owner should be aware of the coverage in each category so he can purchase the protection he desires.

Annual premiums are usually quoted in tables according to types of coverage, limits, and kinds of driving (business, pleasure, etc.).

Special tables showing "Rates for Higher Limits" can be used to calculate the increase from a lower limit to a higher limit of insurance. For example, you may find that you can increase your bodily injury coverage from 10/20,000 to 25/50,000 by paying 13% more.

Performance Objectives

Given:

- Present premium costs for limits in each category of insurance and
- the percent increase in premium to obtain the higher coverage,

the student should be able to increase each present premium cost to the higher cost for additional coverage and find total cost of automobile insurance for all additional limits.

Illustrative Problems

Gibbs, who drives his automobile to w
$25/50,000 bodily injury coverage at
$110.20 and $10,000 property damage c
$61.95. In addition, he purchases co
coverage costing $40, $2,000 medical
for $13, $100-deductible collision co
$112, and uninsured motorist coverage
the total cost of these coverages?

$110.20 + 61.95 + 40.00 + 13.00 + 112

On a car which is used for driving to
that he can increase his basic automo
coverage. To increase the bodily inj
$10/20,000 to $25/50,000, it is 116%
the basic premium of $95. To increas
damage coverage from $5,000 to $10,00
the basic premium of $59. Determine
the automobile insurance for the addi

$95 x 1.16 = $110.20

$59 x 1.05 = $61.95

$110.20 + $61.95 = $172.15 total cost

rmance Objectives

ts for limits in each category

e in premium to obtain the

able to increase each
to the higher cost for
nd find total cost of
for all additional limits.

Illustrative Problems

Gibbs, who drives his automobile to work, purchases $25/50,000 bodily injury coverage at an annual cost of $110.20 and $10,000 property damage coverage costing $61.95. In addition, he purchases comprehensive damage coverage costing $40, $2,000 medical payment coverage for $13, $100-deductible collision coverage costing $112, and uninsured motorist coverage for $4. What is the total cost of these coverages?

$110.20 + 61.95 + 40.00 + 13.00 + 112.00 + 4.00 =
$341.15

On a car which is used for driving to work, Lehman finds that he can increase his basic automobile insurance coverage. To increase the bodily injury coverage from $10/20,000 to $25/50,000, it is 116% (16% more) of the basic premium of $95. To increase the property damage coverage from $5,000 to $10,000, it is 105% of the basic premium of $59. Determine the total cost of the automobile insurance for the additional limits.

$95 x 1.16 = $110.20

$59 x 1.05 = $61.95

$110.20 + $61.95 = $172.15 total cost

AUTOMOBILE INSURANCE

Level II

Content	Rationale
Payment of Losses Under Deductible Clause	Collision insurance covers damage to the owne due to collision or upset. Under this kind o insurance, it is quite common to have "$50 or deductible," which reduces the premium cost. means the insured pays the first $50 or $100 to the insured's car. For example, if the ins car collides with another object and the damag $180, the insured's company will deduct $50 a the remainder of $130.

AUTOMOBILE INSURANCE

Level II

Content	Rationale
r Deductible Clause	Collision insurance covers damage to the owner's car due to collision or upset. Under this kind of insurance, it is quite common to have "$50 or $100 deductible," which reduces the premium cost. This means the insured pays the first $50 or $100 of damage to the insured's car. For example, if the insured's car collides with another object and the damage is $180, the insured's company will deduct $50 and pay the remainder of $130.

Performance Objectives

Given:

. The amount of damage to the owner's car and

. the deductible amount as stated in the policy,

the student should be able to find the amount the insurance company will pay the insured on this claim.

Illustrative Problems

Murray purchased automobile collision
included a $50-deductible clause. Her
in a collision, and the repairs to the
$847.71. How much money did Murray re
insurance company in settlement of thi

$847.71 - 50.00 = $797.71 amount recei
insurance co

erformance Objectives

damage to the owner's car and

amount as stated in the policy,

ld be able to find the amount the

will pay the insured on this

Illustrative Problems

Murray purchased automobile collision insurance, which included a $50-deductible clause. Her car was damaged in a collision, and the repairs to the car cost $847.71. How much money did Murray receive from the insurance company in settlement of this claim?

$847.71 - 50.00 = $797.71 amount received from the insurance company

STOCKS, BONDS, AND MUTUAL FUNDS

LEVEL I

Content	Rationale
Reading Market Quotations	One can read the daily stock quotations and the stock sales of the previous day. Usual information as the prices, the activity, an sales record for the year are shown. Owners track of the progress of their stocks, whil use the daily stock quotations as a means o for a new purchase.
Cost of Purchasing Stocks, Bonds, and Shares in Mutual Funds, Given Commission	Once a stock has been issued to the public, sellers come together to transact business stock exchange. The stockbroker is paid a commission which i to the purchase.

STOCKS, BONDS, AND MUTUAL FUNDS

LEVEL I

nt

Rationale

One can read the daily stock quotations and learn of the stock sales of the previous day. Usually, such information as the prices, the activity, and the past sales record for the year are shown. Owners keep track of the progress of their stocks, while others use the daily stock quotations as a means of studying for a new purchase.

nds, and Shares in Mutual

Once a stock has been issued to the public, buyers and sellers come together to transact business through the stock exchange.

The stockbroker is paid a commission which is added to the purchase.

Performance Objectives	Illustrative Problems
Given: A section of the daily stock quotations from the financial pages of a metropolitan newspaper, the student can answer questions regarding: . opening and closing prices, . sales record for the year, . increases and decreases, and . comparisons between listings.	
Given: . The number of shares to be purchased, . the price per share, . the commission in the form of a percent or a charge per share, the student can find the total cost of the purchase.	Find the cost of 125 shares of the Atla Fund purchased at $15.14 per share plus of $1.41 per share. $15.14 x 125 = $1,892.50 cost of 125 sh $1.41 x 125 = $176.26 commission $1,892.50 + 176.25 = $2,068.75 total in

Performance Objectives

on of the daily stock quotations from
pages of a metropolitan newspaper,

an answer questions regarding:

closing prices,

d for the year,

nd decreases, and

between listings.

of shares to be purchased,

er share,

ion in the form of a percent or a
share,

an find the total cost of the purchase.

Illustrative Problems

Find the cost of 125 shares of the Atlantic Mutual Fund purchased at $15.14 per share plus a commission of $1.41 per share.

$15.14 x 125 = $1,892.50 cost of 125 shares
$1.41 x 125 = $176.26 commission
$1,892.50 + 176.25 = $2,068.75 total investment

STOCKS, BONDS, AND MUTUAL FUNDS

Level I

Content	Rationale
Calculate Dividends Per Share Company Will Pay	When the Board of Directors decide to declare dend, it means they will distribute profits o corporation among the stockholders. The divi be paid as a percent of the par value of the at a specified amount per share. Dividends may be distributed quarterly, semi- or annually.
Calculate Dividends or Interest Earned by Investor	

STOCKS, BONDS, AND MUTUAL FUNDS

Level I

Content	Rationale
s Per Share Company Will Pay	When the Board of Directors decide to declare a dividend, it means they will distribute profits of the corporation among the stockholders. The dividend may be paid as a percent of the par value of the stock or at a specified amount per share. Dividends may be distributed quarterly, semi-annually, or annually.
s or Interest Earned by Investor	

Performance Objectives	Illustrative Probl
Given: . The amount of profits to be distributed among the shareholders (stockholders) and . the number of outstanding shares, the pupil will calculate the annual dividend per share to be distributed.	A corporation declares that $120,0 ted to the common stockholders. shares of outstanding common stoc annual dividend on each share of $120,000 ÷ 20,000 = $6 per share
Given: . The number of shares held by the stockholder, . common stock or preferred stock with a par value, . the declared dividend, either a percent of par value or a dollar amount per share, and . the number of times a year the dividend will be paid, such as annually, semi-annually, or quarterly, the student can determine the amount of dividend income earned by the investor in one year.	
Given: . Face value of bonds held, . number of bonds held, and . percent of interest paid annually, the student can compute the interest earned annually, semi-annually, or quarterly.	A $1,000 bond earns interest at t 7 1/2% payable quarterly. What i interest earned on 8 of these bon .075 x $1,000 = $75 yearly intere $75 x 8 = $600 yearly interest on $600 ÷ 4 = $150 quarterly interes

ormance Objectives

its to be distributed among the
kholders) and

tanding shares,

ilate the annual dividend per
ited.

es held by the stockholder,

eferred stock with a par value,

lend, either a percent of par
amount per share, and

s a year the dividend will be
ially, semi-annually, or quarterly,

rmine the amount of dividend
investor in one year.

ds held,

ld, and

t paid annually,

pute the interest earned annually,
uarterly.

Illustrative Problems

A corporation declares that $120,000 will be distributed to the common stockholders. If there are 20,000 shares of outstanding common stock, what will be the annual dividend on each share of common stock?

$120,000 ÷ 20,000 = $6 per share

A $1,000 bond earns interest at the annual rate of 7 1/2% payable quarterly. What is the amount of interest earned on 8 of these bonds each quarter?

.075 x $1,000 = $75 yearly interest per bond
$75 x 8 = $600 yearly interest on 8 bonds
$600 ÷ 4 = $150 quarterly interest on 8 bonds

STOCKS, BONDS, AND MUTUAL FUNDS

Level II

Content	Rationale
Sale of Stock · Calculating commissions, taxes, proceeds	When a shareholder wishes to sell his stock, h once again obtain the services of a stockbroke the stock is sold, he will receive the market less the commission charge and taxes. The amo actually received from the broker is called th proceeds.

tent	Rationale
, taxes, proceeds	When a shareholder wishes to sell his stock, he will once again obtain the services of a stockbroker. When the stock is sold, he will receive the market price less the commission charge and taxes. The amount he actually received from the broker is called the net proceeds.

Performance Objectives

Given:

- . The number of shares sold,
- . the selling price per share,
- . the commission charge, and
- . the taxes on the sale,

the pupil will find the net proceeds.

Illustrative Problems

Find the net proceeds from the sale of
Utah Gas at 37 1/2. Deduct commission,
York State tax, and S. E. C. fee.

$37.50 x 100 = $3,750.00 selling price

$3,750 x .005 = $18.75 S. E. C. fee
19.00 full lot commiss
$37.75 = commission

$.05 x 100 = $5.00 New York State Tax

1¢ for each $500 or fraction thereof of
involved: $3,750 = $4,000 x .01 = $4

$37.75 + 5.00 + 40.00 = $82.75 total de

$3,750.00 - 82.75 = $3,667.25 net proce

rformance Objectives

ares sold,
e per share,
harge, and
sale,
d the net proceeds.

Illustrative Problems

Find the net proceeds from the sale of 100 shares of Utah Gas at 37 1/2. Deduct commission, surcharge, New York State tax, and S. E. C. fee.

$37.50 x 100 = $3,750.00 selling price of 100 shares

$3,750 x .005 = $18.75 S. E. C. fee
19.00 full lot commission
$37.75 = commission

$.05 x 100 = $5.00 New York State Tax

1¢ for each $500 or fraction thereof of money involved: $3,750 = $4,000 x .01 = $40.00 S. E. C. fee

$37.75 + 5.00 + 40.00 = $82.75 total deductions

$3,750.00 - 82.75 = $3,667.25 net proceeds

STOCKS, BONDS, AND MUTUAL FUNDS

Level II

Content	Rationale
Sale of Stock	
. Capital gain or loss	If the stockholder receives more from the than the total cost of the purchase of th stock, he has made a profit or capital ga cost exceeds the net proceeds, he has a l
. Calculating total gain or loss	When a stockholder wishes to find the pro on a number of shares traded, he will als the amount he received in dividends whil of the stock.

STOCKS, BONDS, AND MUTUAL FUNDS

Level II

Content	Rationale
ss	If the stockholder receives more from the net proceeds than the total cost of the purchase of the same lot of stock, he has made a profit or capital gain. If his cost exceeds the net proceeds, he has a loss.
gain or loss	When a stockholder wishes to find the profit or loss on a number of shares traded, he will also consider the amount he received in dividends while he was owner of the stock.

Performance Objectives

Given:

- . Number of shares traded,
- . total purchase price (including commission),
- . selling price per share (or total selling price), and
- . commissions and taxes on sale,

the student can calculate the capital gain or loss on the sale.

Given:

- . Number of shares traded,
- . total purchase price (including commission),
- . amount of dividends received while stock was owned,
- . selling price per share (or total selling price), and
- . commissions and taxes on sale,

the student can figure the net total gain or loss.

Illustrative Problems

DeDeo bought 75 shares of stock in th
Corporation at 21 1/4 per share. He
commission and a $10.47 surcharge in
the purchase. Two months later, he s
shares at 30 1/2 per share. From the
the following were deducted: commiss
charge, $13.94; New York State tax, $
S. E. C. fee, $.05. What was Dedeo's
and selling the stock?

Purchase

$21.25 x 75 = $1,593.75 cost of 75 sh

$1,593.75 + 20.94 + 10.47 = $1,625.1

Sale

$30.50 x 75 = $2,287.50 selling pric

$27.88 + 13.94 + 3.75 + .05 = $45.62

$2,287.50 - 45.62 = $2,241.88 net pr

$2,241.88 - 1,625.16 = $616.72 net g

erformance Objectives

es traded,
price (including commission),
er share (or total selling price),

d taxes on sale,
calculate the capital gain or loss

es traded,
price (including commission),
dends received while stock was owned,
per share (or total selling price),

d taxes on sale,
figure the net total gain or loss.

Illustrative Problems

DeDeo bought 75 shares of stock in the Artic Mining Corporation at 21 1/4 per share. He also paid $20.94 commission and a $10.47 surcharge in connection with the purchase. Two months later, he sold the entire 75 shares at 30 1/2 per share. From the selling price, the following were deducted: commission, $27.88, surcharge, $13.94; New York State tax, $3.75; and S. E. C. fee, $.05. What was Dedeo's gain from buying and selling the stock?

Purchase

$21.25 x 75 = $1,593.75 cost of 75 shares

$1,593.75 + 20.94 + 10.47 = $1,625.16 total cost

Sale

$30.50 x 75 = $2,287.50 selling price of 75 shares

$27.88 + 13.94 + 3.75 + .05 = $45.62 total deductions

$2,287.50 - 45.62 = $2,241.88 net proceeds

$2,241.88 - 1,625.16 = $616.72 net gain

STOCKS, BONDS, AND MUTUAL FUNDS

Level II

Content	Rationale
Sale of Stock . Rate of return	Often the investor will want to know his investment or cost of the stock i to him in the form of dividend income. is less than the banks are giving, he another method of making his money ea To find the rate of income, the annual divided by the total cost of the stock $\frac{\text{Annual dividends}}{\text{Total cost of stock}} = \text{rate of return}$
Purchase of Stock . Calculating commissions, surcharge, and total cost	A person can verify the amount of comm charged for either a round-lot or odd- consulting the tables issued by the ex The New York Stock Exchange issues a t round-lot orders or multiples of 100 s the commission for each category. If purchase less than 100 shares, or odd look up the commission on the round-lo duct $2 to find the commission he shou

STOCKS, BONDS, AND MUTUAL FUNDS

Level II

Content

Rationale

Often the investor will want to know what percent of his investment or cost of the stock is being returned to him in the form of dividend income. If the percent is less than the banks are giving, he may decide on another method of making his money earn income.

To find the rate of income, the annual dividends are divided by the total cost of the stock.

$$\frac{\text{Annual dividends}}{\text{Total cost of stock}} = \text{rate of return}$$

issions, surcharge, and total cost

A person can verify the amount of commission being charged for either a round-lot or odd-lot order by consulting the tables issued by the exchanges.

The New York Stock Exchange issues a table which lists round-lot orders or multiples of 100 shares and gives the commission for each category. If one wishes to purchase less than 100 shares, or odd lots, he would look up the commission on the round-lot order and deduct $2 to find the commission he should be charged.

Performance Objectives

Given:

- The number of shares held,
- dividend pay period (quarterly, semi-annually, annually),
- amount of dividend per share or percent on par value, and
- total cost of the stock,

the pupil will find the rate of return.

Given:

- The number of shares purchased,
- the price per share,
- the commission charge, and
- surcharge, if any,

the student will determine the total cost of the purchase of stock.

Illustrative Probl

Petraitis purchased 50 shares of s
sion and other expenses included).
cent of income did she receive on
the stock paid a regular quarterly
per share during the year?

$.80 x 4 = $3.20 annual dividend p

$3.20 ÷ 40 = 8% return on investme

Find the total cost of 50 shares o
at 37 1/2. Include commissions of
surcharge of 50% of commission.

$37.50 x 50 = $1,875.00 cost of 50

```
$1,875 x .01 = $18.75 S. E. C. cha
               + 7.00 full lot com
               $25.75
               - 2.00 odd lot comm
               $23.75 commission
```

$23.75 x 1/2 = $11.88 surcharge

$1,875.00 + 23.75 + 11.88 = $1,910

rmance Objectives

es held,

d (quarterly, semi-annually,

per share or percent on par

stock,

the rate of return.

es purchased,

e,

rge, and

ermine the total cost of the

Illustrative Problems

Petraitis purchased 50 shares of stock at 40 (commission and other expenses included). What annual percent of income did she receive on her investment if the stock paid a regular quarterly dividend of \$.80 per share during the year?

\$.80 x 4 = \$3.20 annual dividend per share

\$3.20 ÷ 40 = 8% return on investment

Find the total cost of 50 shares of Utah Gas selling at 37 1/2. Include commissions of \$7 and \$2, and a surcharge of 50% of commission.

\$37.50 x 50 = \$1,875.00 cost of 50 shares

```
$1,875 x .01 = $18.75 S. E. C. charge
               + 7.00 full lot commission
               $25.75
               - 2.00 odd lot commission
               $23.75 commission
```

\$23.75 x 1/2 = \$11.88 surcharge

\$1,875.00 + 23.75 + 11.88 = \$1,910.63 total cost

FEDERAL AND STATE PERSONAL INCOME TAXES

Level I

Content	Rationale
Income	Employers withhold Federal and Sta from employees' wages each payroll end of the year, the employee must tax return with the Internal Reven must furnish all data, including i addition to wages, to determine hi These computations may result in a additional tax payments.
Exemptions	Taxable income is the gross income allowances for each dependent and or itemized).
Standard Deductions	

FEDERAL AND STATE PERSONAL INCOME TAXES

Level I

Content

Rationale

Employers withhold Federal and State income taxes from employees' wages each payroll period. At the end of the year, the employee must file an income tax return with the Internal Revenue Service. He must furnish all data, including income earned in addition to wages, to determine his tax liability. These computations may result in a refund or in additional tax payments.

Taxable income is the gross income less exemption allowances for each dependent and deductions (standard or itemized).

Performance Objectives

Given:

- Gross income,
- number of exemptions and allowance per exemption, and
- deductions (standard percent of total income),

the student can calculate the taxable income.

Given:

- The taxable income (found in previous step),

the student should be able to refer to the tax table which applies and find the tax liability.

Given:

- The taxes paid for the year and
- the tax liability (found in the previous step),

the pupil should be able to find the balance due or overpayment.

Illustrative Probl

Specific personal income tax probl
sented because of the yearly chang
Revenue regulations. However, the
students should participate in the
gram offered by the Internal Reven
Offices located at Albany, Brookly
hattan. The teacher should inform
Coordinator at the district office
school, of the number of students
Mathematics. The coordinator will
with sufficient copies of "Underst
(Publication 21) and "Teachers Gui

ance Objectives

and allowance per exemption,

percent of total income),

te the taxable income.

ound in previous step),

ble to refer to the tax
find the tax liability.

e year and

und in the previous step),

e to find the balance

Illustrative Problems

Specific personal income tax problems are not presented because of the yearly changes in the Internal Revenue regulations. However, the Business Mathematics students should participate in the Teaching Taxes Program offered by the Internal Revenue Service District Offices located at Albany, Brooklyn, Buffalo, and Manhattan. The teacher should inform the Teaching Taxes Coordinator at the district office, nearest the school, of the number of students enrolled in Business Mathematics. The coordinator will supply the teacher with sufficient copies of "Understanding Taxes" (Publication 21) and "Teachers Guide" (Publication 19).

FEDERAL AND STATE PERSONAL INCOME TAXES

Level II

Content	Rationale
Income . Interest . Dividends . Bonus . Commission	The taxpayer is required to declare year. This means that in addition must also declare rent income, comm interest on saviags, dividends, etc
Itemized Deductions . Medical expenses . Contributions . Interest . Taxes . Miscellaneous	Also in filling out his income tax choose to take the standard deducti his deductions. One who has had a expenses which are deductible will his deductions to reduce the taxabl

FEDERAL AND STATE PERSONAL INCOME TAXES

Level II

Content

Rationale

The taxpayer is required to declare all income for the year. This means that in addition to his wages, he must also declare rent income, commissions, bonuses, interest on savings, dividends, etc.

Also in filling out his income tax returns, he can choose to take the standard deduction or to itemize his deductions. One who has had a large amount of expenses which are deductible will choose to itemize his deductions to reduce the taxable income.

Performance Objectives

Given:

- Wage income,
- various other incomes,
- standard deduction percent or itemized deductible items, and
- number of exemptions and allowance per exemption,

the student will find the taxable income.

Given:

- The taxable income (found in the previous step),

the student should be able to refer to the tax table which is applicable and find the tax liability.

Given:

- The taxes paid for the year (withheld from payroll) and
- the tax liability (found in the previous step),

the pupil will find the amount due or overpaid.

Illustrative Proble

In order to offer the student pract
in reading, interpreting, and usin
suggested that each member of the c
the Teaching Taxes Program offered
Revenue Service. Upon request they
booklets for all students enrolled
Mathematics class. In this program
the opportunity to perform many rea
using the various income tax tables

ormance Objectives

omes,

percent or itemized deductible

ons and allowance per exemption,

d the taxable income.

(found in the previous step),

e able to refer to the tax
cable and find the tax liability.

the year (withheld from payroll)

(found in the previous step),

the amount due or overpaid.

Illustrative Problems

In order to offer the student practice and proficiency in reading, interpreting, and using tax tables, it is suggested that each member of the class participate in the Teaching Taxes Program offered by the Internal Revenue Service. Upon request they will send enough booklets for all students enrolled in the Business Mathematics class. In this program the student has the opportunity to perform many realistic activities using the various income tax tables and forms.

BUDGETING

Level I

Content	Rationale
Budgeting Income . Using percents	A budget is an estimation or a plan of h spend income. Individuals or families can use a percen estimated income for each category of ex jecting a budget. In order to test the percentages chosen, keep a record of all expenses. Then com expense with the amount estimated to be These percentages can be modified and us following year's income. The purpose of to plan for the future and to control sp the present.
. Using amounts	An individual or a family may keep track for 1 year and then decide to set up a bu percents. It will be necessary to find of the income was spent in each category.

BUDGETING

Level I

Rationale

A budget is an estimation or a plan of how one will spend income.

Individuals or families can use a percentage of total estimated income for each category of expense in projecting a budget.

In order to test the percentages chosen, it is wise to keep a record of all expenses. Then compare the actual expense with the amount estimated to be spent.

These percentages can be modified and used on the following year's income. The purpose of budgeting is to plan for the future and to control spending in the present.

An individual or a family may keep track of expenses for 1 year and then decide to set up a budget by percents. It will be necessary to find what percent of the income was spent in each category.

Performance Objectives

Given:

- Estimated annual income and
- percentages budgeted in categories such as food, housing, clothing, savings, health, personal needs, entertainment, gifts, and contributions,

the student can find the amount of the income to be spent in each category.

Given:

- The amount to be spent in each category such as food, clothing, etc.,

the pupil can calculate the percent of the income budgeted for each item.

Illustrative Problems

APPENDICES

A. ALIQUOT PARTS

B. MEASUREMENT

C. 60-DAY, 6% METHOD APPLICATIONS

D. METRIC CONVERSION TABLE

E. APPRAISAL OF BASIC ARITHMETIC ABILITY FORMS A AND B

APPENDIX A

Aliquot Parts of $1.00

1/2 = $.50
1/3 = .33 1/3
2/3 = .66 2/3
1/4 = .25
3/4 = .75
1/5 = .20
[illegible] = .40
[illegible] = .60
4/5 = .80
1/6 = .16 2/3
1/8 = .12 1/2
3/8 = .37 1/2
5/8 = .62 1/2
7/8 = .87 1/2
1/10 = .10
3/10 = .30
7/10 = .70
9/10 = .90

Aliquot Parts of $10.00

1/2 = $5.00
1/4 = 2.50
3/4 = 7.50
1/5 = 2.00
2/5 = 4.00
3/5 = 6.00
4/5 = 8.00
1/8 = 1.25
3/8 = 3.75
5/8 = 6.25
7/8 = 8.75
1/10 = 1.00
3/10 = 3.00
7/10 = 7.00
9/10 = 9.00

Common Aliquot Parts

1/2 = .500 = 50%
1/3 = .333 = 33 1/3%
2/3 = .667 = 66 2/3%
1/4 = .250 = 25%
3/4 = .750 = 75%
1/5 = .200 = 20%
2/5 = .400 = 40%
3/5 = .600 = 60%
4/5 = .800 = 80%
1/6 = .167 = 16 2/3%
5/6 = .833 = 83 1/3%
1/7 = .143 = 14 2/7%
2/7 = .286 = 28 4/7%
1/8 = .125 = 12 1/2%
3/8 = .375 = 27 1/2%
5/8 = .625 = 62 1/2%
7/8 = .875 = 87 1/2%
1/10 = .100 = 10%
3/10 = .300 = 30%
7/10 = .700 = 70%
9/10 = .900 = 90%
1/1 = 1.000 = 100%

APPENDIX B

Measure of Weight

C = 100
M = 1000
cwt. = 100 lbs.
T (ton) = 2000 lbs.

Linear Measure

12 inches = 1 foot
3 feet = 1 yard
5280 feet = 1 mile

Square Measure

9 sq. ft. = 1 sq. yd.

Liquid Measure

2 cups = 1 pint
2 pints = 1 quart
8 fluid ounces = 1 cup
32 fluid ounces = 1 qt.
4 quarts = 1 gal.

Dry Measure

8 quarts = 1 peck
4 pecks = 1 bushel

Measure of Time

January = 31 days
February = 28 days
March = 31 days
April = 30 days
May = 31 days
June = 30 days
July = 31 days
August = 31 days
September = 30 days
October = 31 days
November = 30 days
December = 31 days

APPENDIX C

Required Applications — 60-day, 6% Method

Level I

Interest rate — 6% only

Aliquot parts and multiples of days

Base 6 — multiples of 2, 3, 4, and 5 (6, 12, 18, 24, and 30 days)

Base 60 — aliquot part: 1/2, (30, 60, 90, and 120 days)

Level II

Interest rate — 1%, 1 1/2%, 2%, 3%, 4%, 4 1/2%, 5%, 6%, 7%, 7 1/2%, 8%, 9%, 10%

Aliquot parts and multiples of days

Base 6 — aliquot parts: 1/2, 1/3, 2/3, 1/6, 5/6

Multiples up to 9 (12, 18, 24, 30, 36, 42, 48, and 54 days)

Combinations: 7, 8, 9, 10, and 11 days

Base 60 — aliquot parts: 1/2, 1/3, 2/3, 1/4, 3/4, 1/5, 2/5, 3/5, 4/5, 2/6, 5/6, 9/10 (10, 12, 15, 20, 24, 30, 36, 40, 45, 48, 50, and 54 days)

Multiples 2 to 9 (120, 180, 240, 300, 360, 420, 480, 540 days)

Combinations: 75, 80, 90, 100, 105, and 150 days

APPENDIX D

Metric Conversion Table

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Washington, D.C. 20234

NBS Special Public
Revised November 1

Approximate Conversions to Metric Measures

Symbol	*When You Know*	*Multiply by*	*To Find*
		LENGTH	
in	inches	*2.5	centimeters
ft	feet	30	centimeters
yd	yards	0.9	meters
mi	miles	1.6	kilometers
		AREA	
in^2	square inches	6.5	square centimeters
ft^2	square feet	0.09	square meters
yd^2	square yards	0.8	square meters
mi^2	square miles	2.6	square kilometers
	acres	0.4	hectares
		MASS (weight)	
oz	ounces	28	grams
lb	pounds	0.45	kilograms
	short tons (2000 lb)	0.9	tonnes
		VOLUME	
tsp	teaspoons	5	milliliters
Tbsp	tablespoons	15	milliliters
fl oz	fluid ounces	30	milliliters
c	cups	0.24	liters
pt	pints	0.47	liters
qt	quarts	0.95	liters
gal	gallons	3.8	liters
ft^3	cubic feet	0.03	cubic meters
yd^3	cubic yards	0.76	cubic meters
		TEMPERATURE (exact)	
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature

APPENDIX D

Metric Conversion Table

MERCE
ndards
4

NBS Special Publication 365
Revised November 1972

Approximate Conversions to Metric Measures

hen You Know	*Multiply by*	*To Find*	*Symbol*
	LENGTH		
nches	*2.5	centimeters	cm
eet	30	centimeters	cm
ards	0.9	meters	m
iles	1.6	kilometers	km
	AREA		
quare inches	6.5	square centimeters	cm^2
quare feet	0.09	square meters	m^2
quare yards	0.8	square meters	m^2
quare miles	2.6	square kilometers	km^2
cres	0.4	hectares	ha
	MASS (weight)		
unces	28	grams	g
ounds	0.45	kilograms	kg
hort tons (2000 lb)	0.9	tonnes	t
	VOLUME		
easpoons	5	milliliters	ml
ablespoons	15	milliliters	ml
fluid ounces	30	milliliters	ml
cups	0.24	liters	l
pints	0.47	liters	l
quarts	0.95	liters	l
gallons	3.8	liters	l
cubic feet	0.03	cubic meters	m^3
cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)		
Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

Approximate Conversions From Metric Measures

Symbol	*When You Know*	*Multiply by*	*To Find*	*Symbol*
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Order b
SD Catalog No. C13.10: 365/2). Price 10¢.

*1 in = 2.54 cm (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10: 286.

APPENDIX E

APPRAISAL OF BASIC ARITHMETIC ABILITY

Introduction

The two forms of the *Appraisal of Basic Arithmetic Ability* which are presented in this s for the use of teachers of business mathematics. The most appropriate time to administer thi *beginning of the first term and again at the beginning of the second term during the first fu instruction.*

The forms (see pages 169-71) have purposely been set in typewritten form (pica type) and granted the schools to reproduce copies for their own use.

Each form contains 39 questions and can be administered in a full-length class period. lent in both difficulty and content. The questions have been carefully selected to provide a measure of the concepts and computational abilities that are essential for the successful pur study in Business Mathematics. It is hoped that the results obtained on these appraisal form with the type of information that will be useful for planning instruction based on an underst and group abilities in basic arithmetic.

Administering the Appraisal Forms

Distribute a question sheet to each student. Ask the students to read the directions on and then allow a reasonable time for everyone to finish (30-40 minutes). The directions tell they will have the remainder of the class period to answer the questions. They also instruct write their answers in the space provided after each question. If desired, the question shee having the students prepare their own answer sheets and writing their answers on them. Stude paper available for their use.

Using the Results

There are several ways in which the results of this appraisal can be used by the teache and class strengths and weaknesses and to plan effective, purposeful instruction.

One way is to use the scores, whether in terms of the number of correct answers or the answered correctly, to rank the students in a class from high to low according to their arit measured by the questions on this appraisal.

APPENDIX E

APPRAISAL OF BASIC ARITHMETIC ABILITY

he *Appraisal of Basic Arithmetic Ability* which are presented in this section were developed
of business mathematics. The most appropriate time to administer this appraisal is at the
term and again at the beginning of the second term during the first full class period of

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reproduce copies for their own use.

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and computational abilities that are essential for the successful pursuit of the course of
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ation that will be useful for planning instruction based on an understanding of individual
basic arithmetic.

isal Forms

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the space provided after each question. If desired, the question sheets can be reused by
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ir use.

ways in which the results of this appraisal can be used by the teacher to evaluate student
weaknesses and to plan effective, purposeful instruction.

the scores, whether in terms of the number of correct answers or the percentage of questions
rank the students in a class from high to low according to their arithmetic ability as
ns on this appraisal.

A *second way* is to use the results to identify those students whose arithmetic ability s nificantly from that of the class as a whole.

A *third way* is to use the scores to divide the class into groups or sections.

A *fourth way* is to use the class scores on each question to discover those arithmetical students need remedial instruction.

As the first step in the search for those arithmetical abilities needing development thr tion, the teacher should review the course of study to determine what opportunities will be p develop each skill or concept measured by the appraisal. The next step is to analyze the per dents question by question to determine the extent to which students have already developed t third and final step is to relate the information provided by these two analyses and to identi which special remedial instruction is needed before proceeding with the regular program of in

As an outgrowth of this process, the teacher will develop an arbitrary "standard of perfo question on the appraisal. He must decide for himself the level of performance on each of the resents sufficient mastery of the particular skill or concept measured to enable students to s Once this "standard of performance" has been established for each question, it is a relatively tify those questions on which the performance of the class is "below standard."

Obtaining the Class Scores on Each Question

A convenient method for analyzing the performance of a class on this type of appraisal is class score on each question. The class score on a question is the number or percent of stude answer the question correctly. It indicates the mastery level of the question for the class a ferred to as the mastery index.

To obtain the mastery index or the class score for each of the questions, first score the placing an "X" at each incorrect answer. Next, thumb through the answer sheets and count the answering question 1 correctly, and record this total on an unused question sheet in the margi one. Then, repeat this procedure for each of the remaining 38 questions. This will provide a a class score for each question recorded on it. The teacher can use these numbers as the clas in a class of 30 answered the question correctly — or can convert the scores into a more meani mit an easier interpretation — 66 2/3% of the students in the class answered the question corr case a comparison of the class scores for the questions will indicate those arithmetic abiliti is most proficient, and the size of the scores will give an indication of the extent of the va

The teacher may prefer to obtain the class scores on each question during class so that t an opportunity to take part in discovering their own strengths and weaknesses. As part of thi

e the results to identify those students whose arithmetic ability seems to differ sig-
e class as a whole.

the scores to divide the class into groups or sections.

e the class scores on each question to discover those arithmetical abilities in which
truction.

the search for those arithmetical abilities needing development through remedial instruc-
eview the course of study to determine what opportunities will be provided students to
ept measured by the appraisal. The next step is to analyze the performance of the stu-
to determine the extent to which students have already developed these abilities. The
relate the information provided by these two analyses and to identify those abilities in
ruction is needed before proceeding with the regular program of instruction.

s process, the teacher will develop an arbitrary "standard of performance" for each
He must decide for himself the level of performance on each of the questions that rep-
of the particular skill or concept measured to enable students to succeed in the course.
ormance" has been established for each question, it is a relatively simple task to iden-
ch the performance of the class is "below standard."

on Each Question

r analyzing the performance of a class on this type of appraisal is to determine the
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ly. It indicates the mastery level of the question for the class as a whole and is re-
dex.

index or the class score for each of the questions, first score the answer papers by
rrect answer. Next, thumb through the answer sheets and count the number of students
tly, and record this total on an unused question sheet in the margin next to question
cedure for each of the remaining 38 questions. This will provide a question sheet with
tion recorded on it. The teacher can use these numbers as the class scores — 20 students
he question correctly — or can convert the scores into a more meaningful percent to per-
n — 66 2/3% of the students in the class answered the question correctly. In either
ass scores for the questions will indicate those arithmetic abilities in which the class
size of the scores will give an indication of the extent of the various proficiencies.

to obtain the class scores on each question during class so that the students will have
in discovering their own strengths and weaknesses. As part of this procedure, he may

also wish to have the students score their own papers or to have them exchange papers for scoring.
he would read the correct answers for each of the questions and have the students mark those that a
The first step in obtaining the class scores would then be to list the numbers 1 to 39 on the chalk
this, for each question, ask the students who have answered the question correctly to raise their h
they can be counted and record the number on the board. Then, as a final step, have the students c
numbers into percents. This procedure not only will provide the teacher with the same indexes of c
mance as he would have obtained by thumbing through the papers, but also will give each student the
compare his performance on a question with that of the class as a whole.

Using the Norms

A score on this appraisal indicates the arithmetic ability of a student in terms of the number
answered correctly, but does not indicate whether or not this ability is high or low in comparison
other atudents. For this reason, the appraisal was administered to a representative sample of 1,25
ness Arithmetic students in 22 schools in different parts of the State, and the results were used t
percentile equivalents and the mastery indexes given in the tables at the end of this section. The
equivalents and mastery indexes enable the teacher to interpret scores on this appraisal by compari
score made by the students in the representative sample.

1. *Interpreting the Percentile Equivalents*

The percentile equivalent of a score indicates the percent of scores which that score surpasse
score with a percentile equivalent of 60 is higher than 60% of the scores and lower than 40% of the
of percentile equivalents (see page 173) indicates that a score of 22 on this appraisal has a percen
of 40. This means that a student with a score of 22 has a score that is higher than the scores of
dents in the representative sample and that his arithmetic ability as measured by this appraisal is
that of 40% of the students beginning Business Arithmetic throughout the State. In comparing two s
a class, one with a score of 20 and another with a score of 30, the percentile equivalents indicate
metic ability of one student exceeds that of only 30% of beginning Business Arithmetic students, wh
metic ability of the other student exceeds that of 85% of such students. The arithmetic ability of
several classes can also be analyzed and evaluated in the same way by converting the class median o
to percentile equivalents.

2. *Determining the Question Mastery Index*

The mastery index given for each question in table II indicates the percent of students in the
answered the question correctly. These mastery indexes provide a basis for comparing class or indi
performance on each question with that of the students in the sample and may also be helpful in pro
teacher with a frame of reference for establishing the "standard of performance" for the class on e
questions. In the table, the mastery index of 80 for question 1 means that 80% of the students in

students score their own papers or to have them exchange papers for scoring. In this case,
rect answers for each of the questions and have the students mark those that are incorrect.
ining the class scores would then be to list the numbers 1 to 39 on the chalkboard. After
on, ask the students who have answered the question correctly to raise their hands so that
nd record the number on the board. Then, as a final step, have the students convert the
. This procedure not only will provide the teacher with the same indexes of class perfor-
e obtained by thumbing through the papers, but also will give each student the opportunity to
ce on a question with that of the class as a whole.

appraisal indicates the arithmetic ability of a student in terms of the number of questions
ut does not indicate whether or not this ability is high or low in comparison with that of
this reason, the appraisal was administered to a representative sample of 1,250 beginning Busi-
nts in 22 schools in different parts of the State, and the results were used to obtain the
s and the mastery indexes given in the tables at the end of this section. These percentile
ry indexes enable the teacher to interpret scores on this appraisal by comparing them with the
udents in the representative sample.

the Percentile Equivalents

quivalent of a score indicates the percent of scores which that score surpasses. Thus, a
le equivalent of 60 is higher than 60% of the scores and lower than 40% of them. The table
ents (see page 173) indicates that a score of 22 on this appraisal has a percentile equivalent
at a student with a score of 22 has a score that is higher than the scores of 40% of the stu-
tative sample and that his arithmetic ability as measured by this appraisal is greater than
udents beginning Business Arithmetic throughout the State. In comparing two students within
core of 20 and another with a score of 30, the percentile equivalents indicate that the arith-
student exceeds that of only 30% of beginning Business Arithmetic students, while the arith-
other student exceeds that of 85% of such students. The arithmetic ability of a class or of
lso be analyzed and evaluated in the same way by converting the class median or average scores
ents.

the Question Mastery Index

x given for each question in table II indicates the percent of students in the sample that
correctly. These mastery indexes provide a basis for comparing class or individual student
uestion with that of the students in the sample and may also be helpful in providing the
of reference for establishing the "standard of performance" for the class on each of the
ble, the mastery index of 80 for question 1 means that 80% of the students in the sample

answered question 1 correctly. Similarly, the table indicates that question 16 was answered corr
the students in the sample, and question 39, by only 5%.

A class score of 80% on question 1 indicates that the same percent of students in the class
answered question 1 correctly. This information may be interpreted to mean that the students in
about the same proficiency in the particular arithmetical skill measured by question 1 as the stu
most Business Mathematics classes throughout the State. If a class scores 45% on question 33, th
that the class is unusually weak in the concept measured by this question. Reference to the ques
indicates, however, that the students in the sample scored only 30% on this question. He can thu
his students are superior (on this question) to others in beginning Business Mathematics.

Selecting a Form

Two equivalent forms are provided so that two independent measures of the same arithmetic ab
made during a single year. Although the second appraisal can be made at any time, the results wi
found of most value when obtained at the beginning of the second term. The scores obtained on th
can be used in the same ways as those obtained on the first. They can be used to rank students,
students who need special assistance, and to divide students into groups or sections. The class
tions may reveal a new pattern of class strengths and weaknesses which will enable the teacher to
tion on those arithmetic abilities in which he feels the students are "below standard." Increase
scores, in average scores for classes, and in class scores on the questions will represent increa
the abilities measured.

If the norms are to be used in interpreting the results of the second appraisal, it must alw
in mind that the comparisons are being made with students entering the first term of Business Ari
the norms do not provide, and cannot be used as, a measure of progress. The decision as to wheth
scores or improvement in percentile ranks signify good, poor, or satisfactory progress will depen
dard of performance" that the individual teacher feels the students and the class as a whole can
pected to reach at this time.

Limitations

All scores on this appraisal are estimates. They are indicative rather than conclusive. Th
only a small sample of all the questions that could be written to measure arithmetic ability. Th
student's total score on this appraisal will vary from his "true" score by more than 3 points on 1
administrations and more than 6 points in 1 out of 20 administrations. As a rule of thumb, differ
total scores on this appraisal should be as large as 6 points before making the assumption that th
real differences in arithmetic ability.

rrectly. Similarly, the table indicates that question 16 was answered correctly by 50% of
mple, and question 39, by only 5%.

80% on question 1 indicates that the same percent of students in the class as in the sample
rrectly. This information may be interpreted to mean that the students in the class have
ency in the particular arithmetical skill measured by question 1 as the students entering
ics classes throughout the State. If a class scores 45% on question 33, the teacher may feel
ually weak in the concept measured by this question. Reference to the question mastery table
at the students in the sample scored only 30% on this question. He can thus conclude that
ior (on this question) to others in beginning Business Mathematics.

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ear. Although the second appraisal can be made at any time, the results will generally be
en obtained at the beginning of the second term. The scores obtained on the second appraisal
e ways as those obtained on the first. They can be used to rank students, to identify those
ial assistance, and to divide students into groups or sections. The class scores on the ques-
pattern of class strengths and weaknesses which will enable the teacher to refocus instruc-
ic abilities in which he feels the students are "below standard." Increases in student
res for classes, and in class scores on the questions will represent increased proficiency in
.

to be used in interpreting the results of the second appraisal, it must always be kept firmly
risons are being made with students entering the first term of Business Arithmetic and that
de, and cannot be used as, a measure of progress. The decision as to whether increases in
in percentile ranks signify good, poor, or satisfactory progress will depend upon the "stan-
hat the individual teacher feels the students and the class as a whole can reasonably be ex-
s time.

s appraisal are estimates. They are indicative rather than conclusive. They are based on
all the questions that could be written to measure arithmetic ability. Theoretically, a
on this appraisal will vary from his "true" score by more than 3 points on 1 out of 3
re than 6 points in 1 out of 20 administrations. As a rule of thumb, differences between
ppraisal should be as large as 6 points before making the assumption that they indicate
ithmetic ability.

Remove to Duplicate

APPENDIX E

APPRAISAL OF ARITHMETIC ABILITY

Form A

Name ______________________ Date ______________ Score _____

Directions: Answer all of the following questions. Wherever necessary, reduce the answer to the simplest form. Write the answer to each question on the line at the right.

(1) Add: $73.69 + $4.31 + $19.58 + $35.72 (1) ______________

(2) Add:
6402
3394
6786
735
8092
(2) ______________

(3) Subtract: $2.98 from $5 (3) ______________

(4) Subtract: 546.741 from 837.602 (4) ______________

(5) Multiply: .035 by 100 (5) ______________

(6) Multiply: 4.21 by 4.6 (6) ______________

(7) Multiply: 5.123 by 39 (7) ______________

(8) Divide: 3265 by 5 (8) ______________

(9) Divide: 1386 by 22 (9) ______________

(10) Divide: 575.82 by 6.3 (10) ______________

(11) Add: $4\frac{5}{12} + 2\frac{1}{3} + 5\frac{1}{4}$ (11) ______________

(12) Add: $\frac{3}{8} + \frac{3}{4} + \frac{1}{3}$ (12) ______________

(13) Add: $\frac{2}{3} + 12\frac{1}{8} + 9\frac{1}{4}$ (13) ______________

(14) Subtract: $\frac{1}{8}$ from $\frac{1}{4}$ (14) ______________

(15) Subtract: $4\frac{1}{2}$ from $8\frac{2}{3}$ (15) ______________

(16) Subtract: $8\frac{3}{4}$ from $13\frac{1}{2}$ (16) ______________

(17) Multiply: $\frac{5}{12}$ by $\frac{3}{5}$ (17) ______________

(18) Multiply: $9\frac{1}{2}$ by $2\frac{1}{2}$ (18) ______________

(19) Multiply: $\frac{21}{7}$ by 42 (19) ______________

(20) Divide: $\frac{3}{4}$ by $\frac{3}{8}$ (20) ____________

(21) Divide: 27 by $\frac{3}{4}$ (21) ____________

(22) Divide: $1\frac{2}{3}$ by $3\frac{3}{4}$ (22) ____________

(23) Change .05 to a percent. (23) ____________

(24) Which is the larger fraction: $\frac{3}{4}$ or $\frac{2}{3}$ (24) ____________

(25) How much is 9 times 7;
divided by 3; plus 136; minus 150? (25) ____________

(26) Change 40% to a common fraction in
its lowest terms. (26) ____________

(27) Express in inches:
1 yard + 2 feet + 7 inches (27) ____________

(28) At 20¢ each, how many articles can
be bought for $16.00? (28) ____________

(29) Find the average of: 72; 86; 92; 80; 95 (29) ____________

(30) What is $\frac{7}{8}$ of 56? (30) ____________

(31) 45 is how many times $7\frac{1}{2}$ (31) ____________

(32) Which is the largest: $\frac{3}{10}$; 3%; .33; .003? (32) ____________

(33) Express $\frac{1}{20}$ as a decimal. (33) ____________

(34) Write .5% as a decimal. (34) ____________

(35) Write in figures:
fifteen thousand and fifteen thousandths (35) ____________

(36) How many days are there between
March 15 and July 15? (36) ____________

(37) 60 is what percent of 40? (37) ____________

(38) What is $\frac{1}{5}$% of 1200? (38) ____________

(39) Express 12 mills as dollars. (39) ____________

Be sure to use to the best advantage all of the testing time allowed. Make sure that you have answered every question. Reconsider any answers about which you are uncertain.

APPRAISAL OF ARITHMETIC ABILITY Form B

Name ____________________ Date ______________ Score ______

Directions: Answer all of the following questions. Wherever necessary, reduce the answer to the simplest form. Write the answer to each question on the line at the right.

(1) Add: \$36.47 + \$18.92 + \$28.64 + \$94.55 (1) ____________

(2) Add:
7403
2384
5786
357
1725 (2) ____________

(3) Subtract: \$1.97 from \$5 (3) ____________

(4) Subtract: 623.647 from 715.432 (4) ____________

(5) Multiply: .075 by 100 (5) ____________

(6) Multiply: 8.15 by 8.5 (6) ____________

(7) Multiply: 3.754 by 69 (7) ____________

(8) Divide: 4356 by 6 (8) ____________

(9) Divide: 5475 by 15 (9) ____________

(10) Divide: 1.127 by 4.9 (10) ____________

(11) Add: $7\frac{5}{6} + 6\frac{1}{2} + 7\frac{2}{3}$ (11) ____________

(12) Add: $\frac{3}{5} + \frac{5}{8} + \frac{7}{10}$ (12) ____________

(13) Add: $\frac{7}{16} + 4\frac{1}{2} + \frac{3}{8}$ (13) ____________

(14) Subtract: $\frac{1}{6}$ from $\frac{1}{3}$ (14) ____________

(15) Subtract: $8\frac{3}{5}$ from $13\frac{3}{4}$ (15) ____________

(16) Subtract: $9\frac{2}{3}$ from $26\frac{1}{6}$ (16) ____________

(17) Multiply: $\frac{3}{4}$ by $\frac{4}{15}$ (17) ____________

(18) Multiply: $4\frac{1}{3}$ by $3\frac{1}{2}$ (18) ____________

(19) Multiply: $\frac{15}{2}$ by 30 (19) ____________

(20) Divide: $\frac{4}{9}$ by $\frac{2}{3}$ (20) ____________

(21) Divide: 45 by $\frac{9}{10}$ (21) ____________

(22) Divide: $7\frac{1}{2}$ by $2\frac{1}{4}$ (22) ________________

(23) Change .04 to a percent. (23) ________________

(24) Which is the larger fraction: $\frac{2}{3}$ or $\frac{5}{8}$ (24) ________________

(25) How much is 10 times 7;
divided by 7; plus 90; minus 90? (25) ________________

(26) Change 60% to a common fraction in
its lowest terms. (26) ________________

(27) Express in inches:
2 yards + 2 feet + 4 inches (27) ________________

(28) At 25¢ each, how many articles can
be bought for $18.00? (28) ________________

(29) Find the average of: 76; 85; 93; 91; 80 (29) ________________

(30) What is $\frac{4}{9}$ of 72? (30) ________________

(31) 51 is how many times $8\frac{1}{2}$ (31) ________________

(32) Which is the largest:
2.50; $2\frac{3}{4}$; 225%; $2\frac{1}{2}$? (32) ________________

(33) Express $\frac{1}{25}$ as a decimal. (33) ________________

(34) Write .3% as a decimal. (34) ________________

(35) Write in figures:
eighteen thousand and eighteen thousandths (35) ________________

(36) How many days are there between
May 3 and October 3? (36) ________________

(37) 50 is what percent of 25? (37) ________________

(38) What is $\frac{1}{2}$% of 360? (38) ________________

(39) Express 25 mills as dollars. (39) ________________

Be sure to use to the best advantage all of the testing time allowed. Make sure that you have answered every question. Reconsider any answers about which you are uncertain.

APPENDIX E

APPRAISAL OF ARITHMETIC ABILITY
KEY ANSWERS
FOR FORMS A AND B

	Form A	Form B
(1)	$133.30	$178.58
(2)	25,409	17,655
(3)	$2.02	$3.03
(4)	290.861	91.785
(5)	3.5, $3\frac{1}{2}$	7.5, $7\frac{1}{2}$
(6)	19.366	69.275
(7)	199.797	259.026
(8)	653	726
(9)	63	365
(10)	91.4	.23
(11)	12	22
(12)	$1\frac{11}{24}$	$1\frac{37}{40}$
(13)	$22\frac{1}{24}$	$5\frac{5}{16}$
(14)	$\frac{1}{8}$, .125	$\frac{1}{6}$, $.16\frac{2}{3}$
(15)	$4\frac{1}{6}$, $4.16\frac{2}{3}$	$5\frac{3}{20}$, 5.15
(16)	$4\frac{3}{4}$, 4.75	$16\frac{1}{2}$, 16.5
(17)	$\frac{1}{4}$	$\frac{1}{5}$
(18)	$23\frac{3}{4}$, 23.75	$15\frac{1}{6}$, $15.16\frac{2}{3}$
(19)	126	225
(20)	2	$\frac{2}{3}$
(21)	36	50
(22)	$\frac{4}{9}$	$3\frac{1}{3}$
(23)	5%	4%
(24)	$\frac{3}{4}$	$\frac{2}{3}$
(25)	7	10
(26)	$\frac{2}{5}$	$\frac{3}{5}$
(27)	67	100
(28)	80	72
(29)	85	85
(30)	49	32
(31)	6	6
(32)	.33	$2\frac{3}{4}$
(33)	.05	.04
(34)	.005	.003
(35)	15,000.015 $15,000\frac{15}{1000}$	18,000.01 $18,000\frac{18}{100}$
(36)	122	153
(37)	150%	200%
(38)	2.4, $2\frac{2}{5}$	1.8, $1\frac{4}{5}$
(39)	$.012	$.025

APPENDIX E

(Beginning Business Arithmetic Students)

Table I

Percentile Equivalents

Form A and B

Score	%ile Rank
39-34	99
32-33	95
31-30	90
29	85
28	80
27	75
-	70
26	65
25	60
24	55
23	50
22	45
21	40
19-20	35
18	30
17	25
16	20
15-14	15
13-12	10
11-8	5
7-0	1

Table II

Mastery Index

Question Number	Percent Correct	Question Number	Percent Correct
1	80	31	40
2	80	32	40
3	90	33	30
4	80	34	20
5	80	35	20
6	70	36	10
7	70	37	20
8	90	38	5
9	90	39	5
10	70		
11	80		
12	60		
13	60		
14	70		
15	70		
16	40		
17	60		
18	40		
19	60		
20	60		
21	60		
22	40		
23	70		
24	70		
25	90		
26	60		
27	70		
28	80		
29	70		
30	40		